NATUR CYMRU
Nature of Wales

Number/Rhif 62 • Spring/Gwanwyn 2017

Farewell edition:

- **Perspectives on nature**
- **Writing about nature**
- **Welsh seas**
- **Natur mewn hanes**
- **Wildlife and identity**
- **Last word**

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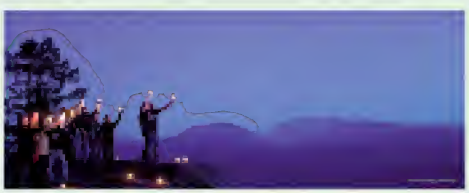
Parti

Cynhelir digwyddiad *Natur Cymru* gyda'r nos ar 25 Mawrth 2017 yn y Split Willow, Llanfairfechan, Gwynedd, i godi arian ar gyfer Sefydliad Morgan Parry. Croeso i bawb, ond cysylltwch â Geoff (geoffkate.gibbs@care4free.net 01248 681936 am fanylion.

Mae'r digwyddiad yn cyd-fynd ag Awr y Ddaear yr WWF (8.30-9.30yh) felly cofiwch ddod â'ch fflachlamp weindio a'ch llusern ynni haul!

Ymunwch, gan ddiffodd eich goleuadau i ddangos eich bod yn malio. Gallwch gofrestru ar-lein ar earthhour.wwf.org.uk



Party

A *Natur Cymru* event will be held on the evening of 25 March 2017 at the Split Willow, Llanfairfechan, Gwynedd, to raise funds for the Morgan Parry Foundation. All welcome, but please contact Geoff (geoffkate.gibbs@care4free.net) for details.

This coincides with WWF Earth Hour (8.30-9.30pm) so please bring your wind-up torches and solar lamps!

Join in and switch off your lights to show that care. You can sign up online at earthhour.wwf.org.uk

GOLYGYDDOL

Un o'n dyheadau wrth lansio ym mis Mehefin 2001 oedd estyn llaw tuag at y sawl oedd yn gwneud penderfyniadau a llunio polisi. Dosbarthwyd copïau i AS. Doedd byd natur, yn ein tyb ni, ddim wedi sefydlu ei le mewn bywyd diwylliannol: efallai y byddai cyhoeddiad o ansawdd uchel a oedd yn portreadu harddwch a chymhlethdod yr amgylchedd naturiol, ei bwysigrwydd i bobl a pha mor fregus oedd, oedd hefyd yn cynnig ffenestr ar y cysylltiad anodd ond boddhaol rhwng pobl a'r amgylchedd, o gymorth. Roeddem am iddo fod yn ddylanwadol. Roedd y Cynulliad Cenedlaethol wedi dod â pholisïau oedd yn effeithio ar yr amgylchedd yn nes at adref ac mae wedi cyflawni llawer, yn enwedig o ran deddfwriaeth. Ond mewn gwirionedd, a yw'r amgylchedd naturiol yn gwneud yn well?

Rhoddwyd y rhifyn arbennig hwn at ei gilydd i archwilio'r cwestiwn hwn. Ceir ynddo lawer o arbenigedd, yn ogystal ag angerdd, ac weithiau gwahanol safbwyntiau. Daw cynnydd drwy drafodaeth wybodus. Am chwe blynedd ar bymtheg, wrth i ddŵr lifo o dan y bont, rydym wedi ei brofi, gan obeithio deall yn well beth mae pobl yn ei wneud i fyd natur, yn dda ac yn ddrwg; i fanylu ar y geiriau hynny sy'n cael eu hynganu'n aml - amgylchedd, cynaladwyedd, bioamrywiaeth. Mae ein geiriau olaf yn dathlu'r ddadl hon am le byd natur ym mywyd Cymru ac yn gadael marc yn y tywod.

Mae'r erthyglau'n adlewyrchu hyd a lled yr agenda amgylcheddol cyfoes, fel yr oeddem wedi bwriadu iddyn nhw ei wneud. Pa well symbol o'r rhan y gall byd natur ei chwarae wrth ddenu alltudiaid Cymreig adref na'r bele? Pa alwad cryfach gawn ni i osod ein hysgwyddau y tu ôl i'r olwyn ac adeiladu cymdeithas gynaliadwy na'r un a gawn gan gyn-Weinidog Amgylchedd a Chynaladwyedd? Mae'r erthyglau yma'n trafod carennydd, hunaniaeth, lles, cymdeithas; maen nhw'n cysylltu byd natur a diwylliant.

Dyma beth mae *Natur Cymru* wedi ei wneud o'r dechrau. Yn ogystal â gwyddoniaeth dda ac ysgrifennu (a gwaith celf) arbennig a ysbrydolwyd gan fyd natur, mae erthyglau wedi diddymu terfynau annaturiol sy'n bodoli rhwng byd natur a diwylliant. Yr hyn sy'n peri i mi edifarhau fwyaf yw colli'r fenter hon, y chwalu llinellau. Rydw i wedi ysgrifennu rhywbeth ynglŷn â hyn mewn erthygl sy'n agor y rhifyn hwn ac sy'n darparu cyd-destun ar gyfer yr hyn sy'n dilyn. Darperir y gair olaf gan David Parker, y mae ei gefnogaeth o'r cychwyn wedi bod yn hael ac yn werthfawr. Wna'i ddim rhestru pawb sy'n haeddu clod arbennig heblaw am un eithriad: mae'n rhaid i mi grybwyll Mandy Marsh, ein Rheolwr Cynhyrchu. Roedd ei dawn a'i hymroddiad yn amlwg wrth i ni gynhyrchu pob un rhifyn. Mae ansawdd y cylchgrawn wedi ei gynnal gan ein cyfranwyr, yn cynnwys artistiaid a ffotograffwyr, ond mae'r grym â'n cadwodd i barhau â'n taith yn perthyn i chi, y darllenydd a, gobeithio, y tanysgrifiwr.

Mae Cymru'n parhau i fod yn wlad wych i'w chrwydro, yn llawn o ddarganfyddiadau i ddod. Mae'n aros amdanom. Awn i'r awyr agored i'w blasu a dysgu amdani – a chyfathrebu'r hyn a ddarganfyddwn.

James Robertson

EDITORIAL

One of our aspirations when we launched in June 2001 was to reach out to movers, shakers and policy-makers. Copies were distributed to AMs. Nature, we figured, had not established its place in cultural life: a high-quality publication which portrayed the beauty, complexity, importance to people and vulnerability of the natural environment, which offered a window onto the difficult and rewarding nexus between people and environment, might help. We wanted it to have traction. The National Assembly had brought policies affecting the environment closer to home and has achieved much, especially on the legislative front. Down in the hedge, is the natural environment faring any better?

This special edition has been put together to examine this question. There is much expertise on display, and also much passion, and sometimes different shades of opinion. Progress comes through informed debate. For sixteen years, as water flowed under the bridge, we have sampled it, hoping to better understand what people are doing to nature, good and bad; to particularise those words which get bandied about - environment, sustainability, biodiversity. Our parting shot celebrates this debate about nature's place in Welsh life and leaves a marker in the sand.

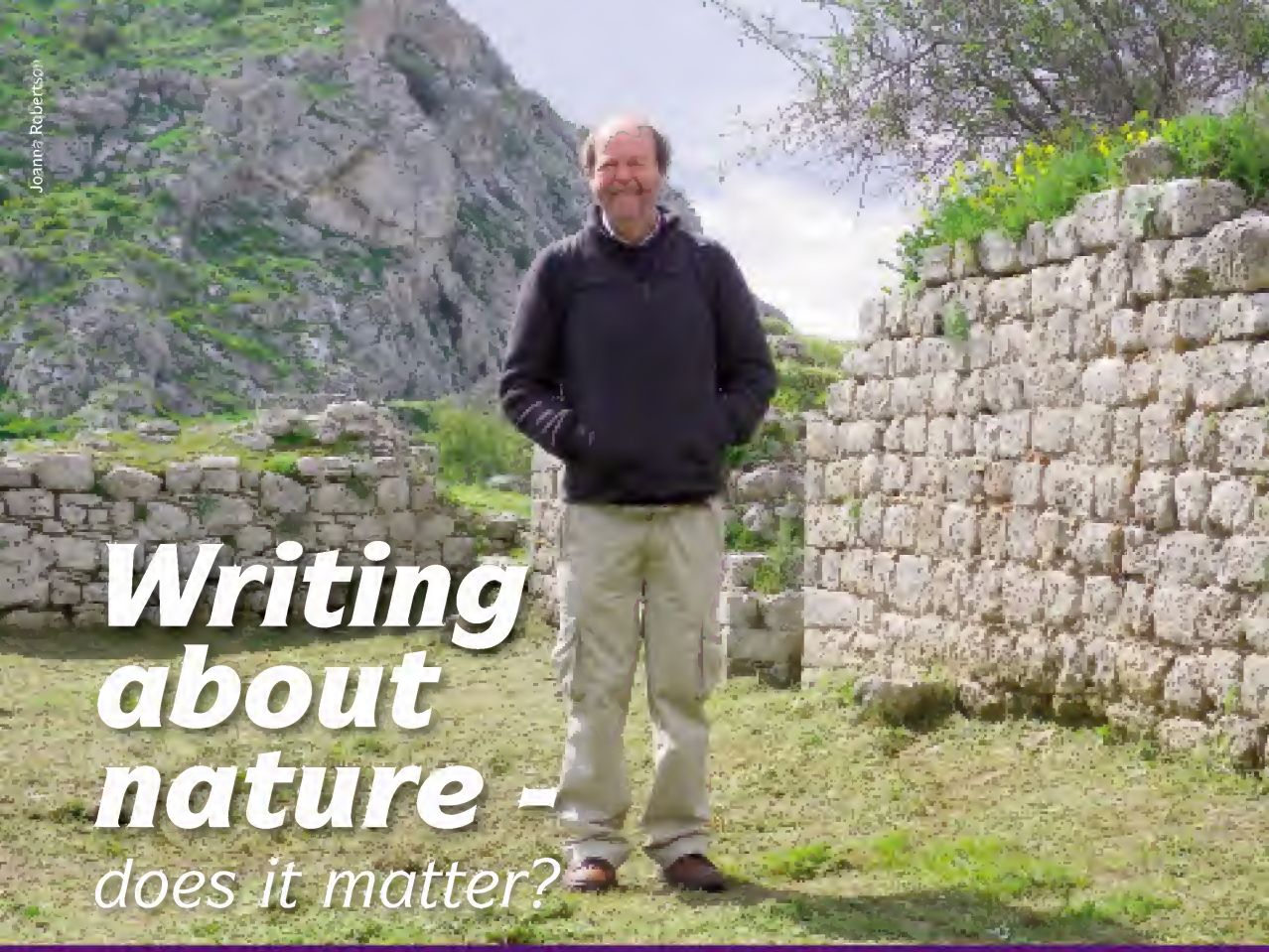
Articles reflect the breadth of the contemporary environmental agenda, as we always intended. What better symbol of the part nature can play in drawing home the Welsh diaspora than a pine marten? What stronger clarion call to put our shoulders to the wheel and build a sustainable society than from a former Environment and Sustainability Minister? These articles touch on kinship, identity, well-being, society; they connect nature and culture.

Natur Cymru Board members hard at work.

This is what *Natur Cymru* has done from the beginning. As well as good science and fine writing (and art work) inspired by nature, articles have dissolved unnatural demarcation lines which exist between nature and culture. The passing of this enterprise, this blurring of lines, is what I most regret. I have written something about this in an article which opens this edition and provides some context for what follows. The last word is provided by David Parker, whose support from beginning to end has been generous and invaluable. I won't list all those who deserve special credit with one exception: I must mention Mandy Marsh, our Production Manager, whose talent and dedication has accompanied the birth of each and every edition. The quality of the magazine has been upheld by our contributors, including artists and photographers, but the force which has kept us going belongs to you, the reader and, I hope, subscriber.

Wales remains a great country to explore, full of discoveries to be made. It is waiting for us. Let us get out there, experience it, learn about it – and communicate what we find.

James Robertson



Writing about nature - does it matter?

Limestone country, where nature and culture complement each other

For sixteen years **Natur Cymru** ***has witnessed and reported on a rapidly changing environmental agenda, and has provided authors with a space where they can explore and share their passion for nature.*** ***JAMES ROBERTSON*** ***reflects on this legacy and highlights some of the themes which follow in this farewell special edition.***

This is not like stepping up to the pulpit at a funeral. More like the gathering afterwards, those funny stories, words of appreciation, shared sentiments. I have given myself the perk of adding my voice to the congregation in these pages. Not that all *Natur Cymru* contributors over the years have thought they were being offered a perk when I first approached them. Yet almost without exception they have responded and allowed me to mess about with their prose, and have made a good show of being happy with the outcome.

Contributors have been selected on the basis that readers want their knowledge. They consent because they believe that what they know matters – it excites them or moves them in some way. And this provides the best cocktail for a good article. Although *Natur Cymru* is part scientific journal of record, a kind of documentary of Welsh nature, it is also about those people looking through the lens at a hispid tuft, or staring up through a telescope at a speck in the sky. Being alive, breathing in and out, being connected to extraordinary beauty, animates the words on the page. In engagement lies entertainment.

I set this out here only because it's my last chance to say something I firmly believe but have been reluctant to commit to paper: that what is so unceremoniously shoved in a box called 'natural history' or 'nature writing' is actually unbounded nourishment for the soul. (Naturally enough I'm a committed atheist who confusingly is happy to go along with all manner of supernatural nonsense if my DNA seems to require it). One page can change how you see the world beyond the white noise of humanity.

The Size of Wales project "punching above its weight" and having an impact.

Every now and then, not often, I have been sent articles which have shaken me, stunning the silence, like the hush at the end of a concert. The best articles feed us, make us partners as we explore the non-human blood of a nation: they fulfil a creative and literary purpose. Collectively, they tell of human endeavour in response to nature's transformative power, as compelling a drama as I can imagine. That's a big claim for *Natur Cymru*. I seem to have left the gathering and climbed up to the pulpit. Back to the chat. What's been going on in nature in Wales these last sixteen years?

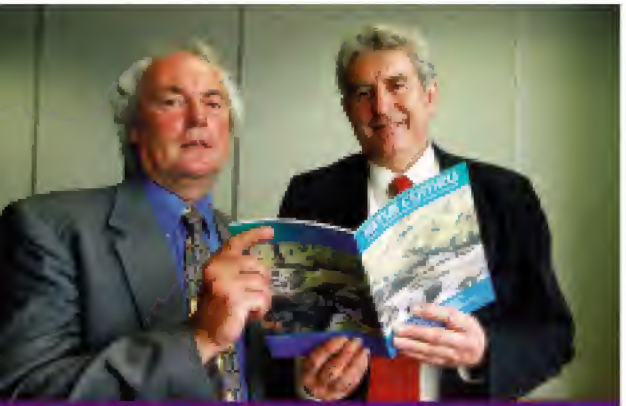
Looking outwards

A new book, *Butterflies of the West Midlands*, a recent review informed me, covers an area half the size of Wales. How irritating I find that comparison. As anyone who travels through this country will attest, Wales is much bigger than its two million hectares. It has many vertical hectares hidden in its mountains. Yet more are written into the wiggles of its coastline. And what a coast, what sea, columns of rich water descending to a seabed mosaic of sponge and coral-encrusted rocks, shingles, sands and marls. Then there are islands whose sheer cliffs swarm with clamouring seabirds in summer. Not many of those in the West Midlands. All that is before you consider the nation, its people, languages, characters (individual and regional, north, south and in between) and cultural wealth.

When it comes to describing forest loss, Wales is in danger of being the journalistic equivalent of a football pitch. In order to turn this negative cliché on its head, a project was launched to help protect a swathe of tropical rainforest equivalent in area to Wales. The campaign was, unsurprisingly, called Size of Wales. It was supported by the public, by organisations such as RSPB, and, importantly, by the Welsh Government. As Lara Hallet, RSPB, wrote in 2011 (NC 39:43) "Wales is set to become the first country in the world to mobilise a national response to deforestation and climate change." Since then, having achieved its goal, the target has been expanded to protect an area of tropical forest twice the size of Wales, backed by the Welsh Government, Waterloo Foundation and others, and now drawing in the corporate sector. We can all take pride in this achievement and ambition.

Independence

One of the great benefits of the devolution settlement has been a more outward-looking, self-reliant mood. Had *Natur Cymru* been spared, this would, I think, have been something to work on. We have



John Lloyd Jones, Chair of CCW, and First Minister Rhodri Morgan at the launch of Natur Cymru in 2001

much to celebrate, but sometimes the bad news stories drown out the celebration, we hear gunfire instead of champagne corks. There are good reasons for this, of course, and, as other articles point out, whether the glass is half full or half empty, it's not much good if we keep being handed a smaller glass.

At home and abroad Nature is undersold because it cannot be sold. Why bring the Welsh diaspora home just to explore nature? They need to be spending their money on castles and love-spoons. I am hoping this will change; that, alongside our legends, Visit Wales will introduce them to the country and its wildlife inhabitants, and that this will generate income to help look after nature, which is not a free lunch. It's worked for Scotland. Visit Wales has designated next year – 2018 – as the *year of the sea*. Does that offer us a real chance to clean up our marine act, or will it be window-dressing, mere marketing?

I sometimes wonder whether marine biologists know too many things which other people don't know. I am very pleased that they do, and am constantly reminded that, in all fields ecological, we punch far above our weight (a terrible phrase I keep being drawn to). All this expertise in the marine sphere is logical when you consider the extent and quality of the seas around us. This expertise makes it easier for politicians to do the right thing, and easier to spot them when they don't. The Minister might be better served by having a civil servant or two who know something about the subject, and keep them in post for a while.

Farms and forests

In the autumn 2016 edition (NC 60: 7-11) I wrote about the opportunities for a re-configured post-EU farm policy, so I haven't commissioned an article specifically on farming this time. Buying a farm opened the door for me to meet many farmers, and to understand much better where they come from. I recommend it. Yet it amazes me that collectively they toe the farming union line, one of narrow self-interest, even when individually they are so much more thoughtful. Other voices need to be heard in the post-Brexit farm settlement.

To put it as simply as I can, the Common Agricultural Policy has paved the road to environmental hell with good intentions. Reform is a chance to get rid of the paving. It offers a green way, complete with birdsong, water-retaining pools and much else, especially in the uplands. Food production must be allowed to stand on its own two (or four) feet, while taxpayers support those public goods which the market cannot deliver.

Post-EU reform could also break down the policy (and funding) barrier which squeezes trees out of farmland and open spaces out of forests. Unifying policy would allow land to be managed in a more nuanced way. Trees could then be eased back into the landscape, and not necessarily by planting, without threatening farm subsidies. Forests could rediscover ancient purpose as places of light and shade, not mere timber storage facilities. Leaving the EU will remove a fig leaf which justifies the current arrangements.

When *Natur Cymru* appeared in June 2001 the environment was in the ascendant, a green flag flying above the Assembly. First Minister Rhodri Morgan gave an impromptu, heart-felt paean to the flower-rich meadows of his childhood. Subscriptions rolled in, thanks to a generous two-for-one year offer. One Wildlife Trust thought we should be part of the deal for WT supporters, an enticement to join. That came to nothing. We looked enviously at the National Trust's enormous membership. No, they wouldn't let us circulate a flyer to their members. This stand-offishness has a long pedigree, but the organisation, in Wales at least, has come a long way

from the time when I felt obliged to return my membership because of the way staff in Wales were being treated. They have an incredibly difficult balancing act, and I am increasingly impressed by the way they manage it, and the quality of the staff they attract. I would not exactly say that NT is a team player in the environmental league, but they are a hugely important contributor to the conservation of nature here, as they have been to *Natur Cymru*, sending in a string of articles about Welsh wildlife and habitats.

Strengthening sinews

The Wildlife Trusts are a mixed bag, with parochialism in their genes, an impossibly wide remit, and a tendency to say yes to every request at a cost to the things that most matter. Yet they are the bedrock of conservation on the ground, are playing a good hand in conservation at sea, and show every sign of growing up without losing that childhood wonder at nature that is their hallmark. They are a powerful force on the side of the angels.

There are more organisations doing more good here than there were when we started. Plantlife now has a Welsh members' day, and punches… oh oh, it's that punching weight thing again; although I can't get too excited about gluing bits of *Lobaria* onto tree trunks, and I do wonder who will remember all the common plants, banks of primroses and violets, say, which future generations are likely to be deprived of, despite legislation.

The public sector is in disarray, though we should not forget the enormous good which Local Authority ecologists and others have done and continue to do, where their jobs still exist. We have a cracking young institution in the National Botanic Garden, seriously good work is done at the National Museum Wales, and we should rejoice in our unique network of records centres.

Land managers come in all shapes and sizes, and their articles likewise. Besides the organisations sending in their stories of sites well managed or restored, and the issues we have tackled, *Natur Cymru* has offered a space for people who may not usually write but have a place to write about. Ownership, by the power of legal deeds or of imagination, has produced some wonderful articles. Re-visiting magazines past for this article has been like stepping into a room full of old friends.

I admit to feeling anger at the bean counters who pulled the rug from under *Natur Cymru*. More than that, I feel real concern at the demise of a statutory body with any sense that it exists to champion the cause of nature. But mostly I feel gratitude that this wonderful opportunity came my way, expanding my knowledge of Welsh nature and people. I never ran out of willing contributors or new angles to fill the pages with, for the possibilities are infinite.

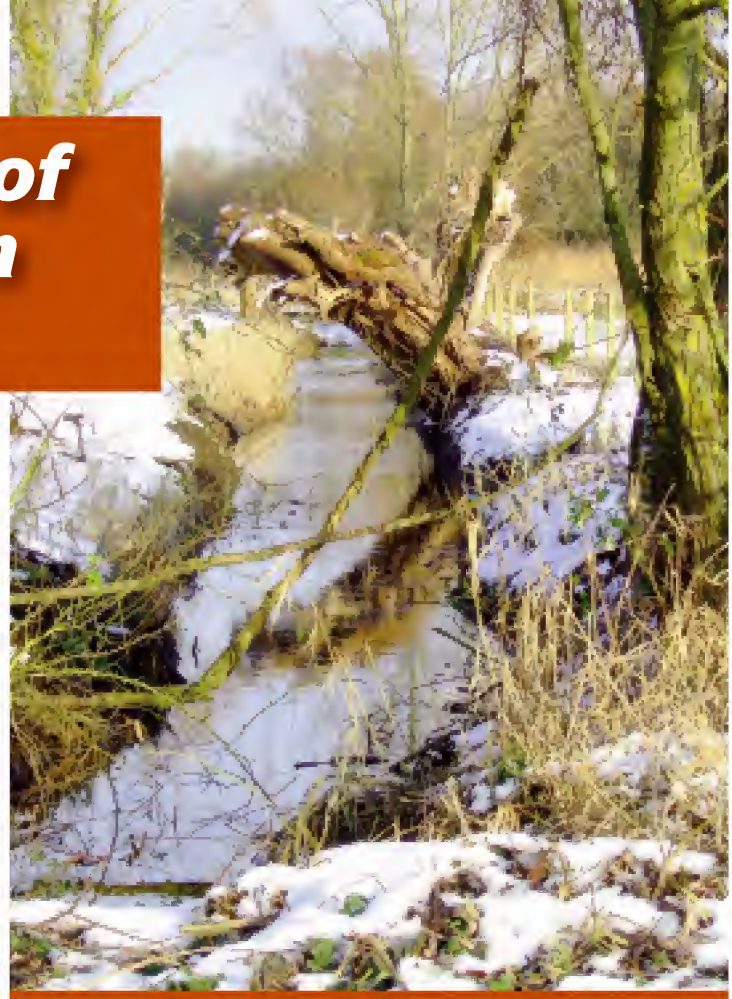
I came back recently from a disturbing trip to Australia. I had thought the place a heaven on earth, which it is, in places. I looked about me: hardly a native plant could I find anywhere. On that trip I came face to face with what can only be described as biocide – the intentional destruction of swathes of native plants and animals from the face of a part of the earth, fired by fear or hatred. Most of this occurred more than a century ago, but in some places around the globe it is still happening.

I came home, sat on a hill and drank in the view. From space, Wales is a small spot on the face of planet earth, but it is our small spot. It is an exceptionally beautiful and varied spot, creased with mountains and valleys, embroidered with farms and forests, streaked blue with rivers and lakes, carved into headlands and bays. It is a great place to live, I reflected, and it is down to us to look after it.

James Robertson *has edited all but a few editions of this magazine since its inception. He has written widely on environmental topics, and has a regular column, 'Flying Kites', in* British Wildlife.

The end of Nature in Wales?

***MICK GREEN** reflects on the disparity between pioneering environmental legislation introduced by Welsh Government and the reality of what is happening on the ground.*



Ray Ok CC-SA 3.0 Unported

Parts of the Gwent levels are threatened by the proposed route of the new M4 motorway

Thanks to a lack of commitment from Welsh Government to provide a small amount of funding, this is the final edition of *Natur Cymru*. Is this symptomatic of wider attitudes to nature? Despite the fact that we have ground-breaking new Environment Acts in Wales, these are not being translated into action. Could it be the beginning of the end for any commitment by officialdom to halt the slide in the fortunes of nature in Wales?

Two recent reports document this slide. The latest *State of Nature in Wales* report, published towards the end of 2016, revealed further declines in priority species of birds, butterflies and plants; and the *State of Natural Resources Report* (SoNaRR), published by Natural Resources Wales (NRW) at the same time, reported the unfavourable condition of 55% of top wildlife sites. NRW lacks the staff, expertise, funds and possibly the high-level will to do anything about this.

If you compare the two reports, it is clear that the official language used in the latter differs considerably. The terms 'nature' and 'conservation' have been dropped in favour of 'sustainable management of natural resources' – Nature to be exploited. Despite giving themselves challenging targets under the Well-Being of Future Generations Act and the Environment (Wales) Act, recent Welsh Government decisions have ignored these and confirmed their direction of travel. Examples abound: it is determined to push ahead with the most damaging motorway (M4) route over the Gwent levels SSSI (and a culturally and historically significant landscape). It has decided to open up Cardigan Bay Special Area of Conservation to highly destructive scallop dredging. It has given support to a motor racing circuit on a peatland site. It has tarnished Wales' standing in the world by continuing to allow the Greenland white-fronted goose (a sub-species in serious decline) to be shot - the only place in the world, on this rare goose's migratory flyway, where

this happens (NC 49:17). It licences the shooting of cormorants and goosanders purely on the basis that they might eat some fish – in clear breach of the law, as no specific evidence that the birds have a 'serious impact' on the fishery has been provided.

The Welsh Government is consulting on several reports such as the 'Natural Resources Management Plan' and 'Nature Recovery Plan'. These impenetrable documents are shrouded in opaque language and lack specific targets. They demonstrate Welsh Government's addiction to process rather than outcome. There have been huge numbers of consultations on environmental subjects, tying up masses of precious time of consultees, but there is no evidence that the detailed comments submitted ever break through the mind-numbingly dense official language in which they are written to produce anything which can stick; or that they benefit nature one iota. Indeed, there is a growing realisation at the highest levels that most Welsh Government consultations are a complete charade and not worth responding to. Meanwhile, we still have an internationally agreed target to halt the loss of biodiversity by 2020 – only three years away. As there is no plan in place to achieve this target, it is certain we will miss it quite spectacularly. There seems to be a worrying lack of understanding and commitment to reverse declines in wildlife, either to meet these commitments or for the sake of Nature in its own right. Leadership on the environmental agenda seems to be entirely absent these days from Government and its agencies, with worryingly little noise from the NGOs.

And there is another problem: we are suffering from a 'Shifting Baseline Syndrome'. Each new generation begins by accepting what they perceive as 'normal' and uses this as a baseline to evaluate change. Populations decline still further, but serve as new baselines to the next generation. The result is a gradual shift, a gradual accommodation of the creeping disappearance of species. This is illustrated by Tim Birkhead's work on guillemots on Skomer (*Natur Cymru* 61), where an increase from 2,634 in 1970 to 25,000 in 2015 might seem a tremendous success – until detective work from old photographs estimated the population in the 1930s to be

Andy Hay, RSPB images

Greenland white-fronted geese (*Anser albifrons flavirostris*, Gwyddau talcen-wyn yr Ynys Las) are globally endangered but can still be legally shot in Wales.

100,000 birds. There appears to be no ambition in current policy to restore wildlife to its former glory, despite words such as 'restore' and 'enhance' being obligations under various Acts and Directives. Under the Convention on Migratory Species we have an obligation to restore numbers to 'historic levels' – a clause that is always conveniently forgotten.

So is there any hope? It's sometimes difficult to be optimistic in conservation but we must have some hope to keep going. The strong wording in the new Welsh Acts may eventually work through to some action (and gives the potential of legal action to force the Welsh government to abide by its own rules); post-Brexit changes to land and sea management after subsidies may be positive; and there are new landscape-scale policies being developed along with re-wilding, helping to restore large areas of land.

The support for *Natur Cymru* and examples such as 30,000 people signing a petition to stop scallop dredging in a protected site shows we still care. We, collectively, need to get conservation back up the political agenda and keep fighting for a place for Nature in its own right.

***Mick Green** is an independent ecologist. He has worked in conservation in Wales all his professional life.*

Environment: cornerstone of social well-being

Jane Davidson on Skomer

Courtesy Jane Davidson

How do we build a fair, environmentally sustainable society? JANE DAVIDSON considers some of the achievements so far and the challenges ahead.

For years I've thought that if people understood the need to make changes in their lives to tackle climate change, or any of the other big challenges of our generation, they would do so if they really understood the consequences. I have tried to play my part in creating policy and legislation which will contribute towards more responsible outcomes for people and planet, but the challenges grow and somehow we seem incapable of the appropriate action.

In Wales we have seen some innovation through regulation in the National Assembly, for example: the dramatic reduction of plastic bags through the introduction of the charge; better recycling outcomes by far than other parts of the UK and most of Europe; and most recently the requirements in the Well-being of Future Generations (Wales) Act 2015 for all public services to improve the social, environmental, economic and cultural well-being of the people of Wales in everything they do. This is a very welcome and hugely ambitious new law, not least since Welsh Government itself has to comply with its own legislation.

I hope that implementing the Act will lead to better governmental decisions being made in the longer term, focused on real needs. At a basic level, clean air, clean water, shelter, secure energy and food are primary needs. Yet all are under threat. Here in Wales, a largely rural country famed for having more sheep than people, we grow only 3% of the fruits and vegetables needed to sustain the Welsh population on less than 0.1% of the land. On that basis, we could meet 100% of our needs on 3% of the land, yet there is as yet no proposal to take such a step. Looking to our basic securities in uncertain times should be at the heart of all policy making.

I believe it is the primary role of governments to look after their people. We have seen governments

in the past in the UK, particularly immediately after the 2nd World War, legislate for the whole population with ambitions about full employment, education for all, the establishment of the NHS, protection of natural resources, and support for the family through the provision of council housing for all who cannot afford to access it themselves. We have seen similar ambitions for a safe, secure and environmentally responsible EU. This seems to me to be the proper response from governments in a civilized world; to enable their people to have a safe and secure base from which to build a sense of belonging, gain the respect of others, and create societies which are at ease with themselves.

Nigel Kelly

Jane was instrumental in helping to develop the Wales Coast path, enabling all to keep fit while enjoying the beautiful Welsh coastline

The challenge of course is immense. A society focused on well-being is going to demonstrate very different criteria for success to the traditional consumerist measures of success, such as respect on the basis of the size of your house, the amount you earn, the car you drive, the number of holidays you take abroad. Such measures of success are unsustainable, as they encourage greater consumerism and greater inequality.

Plastic bags are easily mistaken for jellyfish and swallowed by marine animals

So how do we make beneficial changes for people and the planet? Ultimately it comes from action by governments and people and there is some cause to be hopeful even as we look into the Brexit void. The 2030 UN Sustainable Development Goals are supported by 193 countries. John Rawls, the American philosopher, talks about inter-generational justice, where each generation should do unto future generations what they would have wanted past generations to do unto them. In Wales, uniquely, the National Assembly has now passed visionary legislation which aims to do exactly that – the Well-being of Future Generations (Wales) Act. At its launch, the UN said "what Wales does today, the world will need to do tomorrow."

What might success in terms of the new Act look like? A society focused on well-being should be safe (enabling new freedoms for children and adults to engage with nature); secure (providing for humans' basic needs re food, clean water and clean air); provide meaningful employment (in society's and future generations' interests); protect our resources (for the public good on land and in the sea); be moral (ethical and fair); support families (to live low carbon, ethical, one-planet lifestyles in homes made

Anna Williams

Anna Williams

In 2012 (*Natur Cymru* 43) Anna Williams wrote about gardening for wildlife, and in particular about involving children in schools in North Wales in schemes to turn their concrete playgrounds into mini-havens for wildlife. In the picture above left, pupils at Ysgol Bontnewydd in 2011 have completed laying out a herb circle. By 2016 (above right) the garden is well established. There was no war memorial in Bontnewydd so the village committee asked if they could place one in the school garden. This memorial seat, pictured below right, surrounded by a willow hedge, helps to teach the children about their local history too.

The ambitious Well-being of Future Generations (Wales) Act 2015 is based on the Brundtland Report definition of Sustainable Development as being "... development that meets the needs of the present without compromising the ability of future generations to meet their own needs."

With many children increasingly divorced from the natural world, it is more important that ever that we do not destroy what is left and, where possible, improve upon it – whether in a small corner corner of a school yard or with national policy decisions on how to manage the environment.

Anna Williams

from the most sustainable materials); and advocate health and wellbeing for all (physical and mental).

It is with sadness that I write this for the last, current edition of *Natur Cymru*, a magazine that has played an excellent role in bringing nature to the attention of the wider Welsh public and one I hope will return very soon. Financially, life is tough everywhere at the moment, but I hope the Welsh Government is serious about its sustainability commitments and is prepared to put all its weight and influence behind the ambition of a sustainable nation and, in doing so, protect both its people and our planet.

Jane Davidson *is Pro Vice Chancellor for External Engagement and Sustainability and Director of the award winning INSPIRE (Institute for Sustainability Practice, Innovation and Resource Effectiveness) at the University of Wales Trinity Saint David. Prior to her current role, Jane was Minister for Environment and Sustainability in Wales from 2007 to 2011.*

Dispatches from the hills

Shaping the land

I met my neighbours by the stone sheep pens; they were bringing the ewes with twins into the fields by the house to keep a close eye on them. A ewe is refusing to budge; one dog cuts off her escape route whilst the other is flat to the ground, moving forward like a crocodile. She turns to face him, stamping her foot defiantly, but gradually backs up, her lamb close by her side. Dog and ewe are nose to nose, no more than a foot apart. The farmer is calling to the dogs – a stream of words, some soft, others harsh, to which they instantly respond. Leaning on his crook, a new born lamb under one arm, he looks totally at ease – a man in his element.

I have been spending time with these men over the last couple of years trying to understand what it takes to farm this wild and obdurate place. They are patient with my questions, my ignorance of the obvious, pleased that somebody is taking an interest, they say. If you look out of the window anywhere in rural Wales you will see the work of such people. Three thousand years ago there would have been a 'wildwood': some kind of fluctuating continuum of forest, scrub and wood-pasture. Then gradually humans got busy felling, burning, cultivating and grazing with domesticated stock – we began to shape the land. Over time it became only farmers who did that work, and by the beginning of the last century they had fashioned a diverse 'cultural landscape' which was both productive and rich in wild and human life. It was the archetypal countryside for many people: hedged fields, grazing animals, small woods and farmsteads.

This farm is still like that, if a little on the wild side. It is certainly not typical anymore and, in truth, like most hill farms, would not be viable without subsidies. Rough, high and wet, it is too demanding for all but the local Welsh Mountain sheep. It is also very beautiful (if that is how you see the world): craggy woods plastered with mosses and lichens, rock-strewn *ffridd* dotted with ancient thorns and crab apples; a hurtling mountain river along one boundary and, up above, a wild moorland of heather and bog. Along with their forebears, these men and their sheep have shaped it this way from the post-glacial 'wildwood'.

What has also evolved over the 2,000 years of farming is a human culture rich in knowledge, skills, language, custom and mutual understanding. These two men go about their work with such understated ease, seemingly oblivious of their expertise. To see them work is to experience how they belong here; a hand-in-glove fit between people and place. Looking around this farm I am reminded of how much of the wildlife and landscapes we treasure have arisen because of agriculture – mostly as an unintended by-product. Is this place an anachronism or a model for a more intentional future? It is becoming clear that society requires other things from the land as well as food – the so-called 'ecological services', including a rich and beautiful countryside – for which it must be willing to pay. Could farmers come to husband wildlife and landscape with as much pride and skill as lamb or beef? It would mean a big shift in attitude for some and acquiring new expertise for many; however, it could help ensure the future of a distinctive culture, for which we would all be the richer.

David Elias

www.llgc.org.uk

Farmers helping each other to round up Glan Meryn's sheep, Machynlleth, 1954

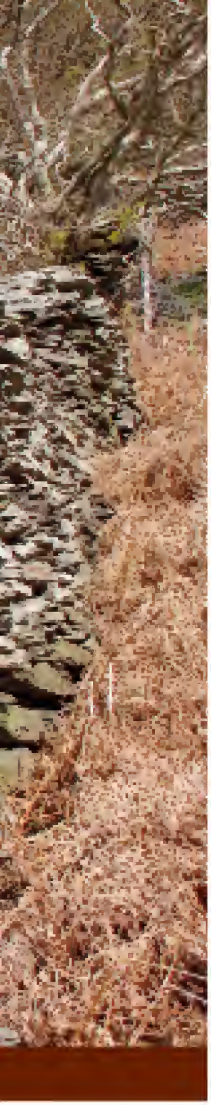
RSPB Cymru

The current state of nature conservation in Wales:

an RSPB Cymru view

Nature conservation in Wales is in a state of flux, with the Government's good intentions not yet being reflected in biodiversity gains. The statutory body for conservation is suffering budget cuts, and site protection under European designations could be lost once we have left the EU. SHARON THOMPSON charts the way through the minefield, outlining what could be done and who should do it.

I can't imagine anyone in the UK disputing that 2016 was a seminal year, though we may differ on whether for good or bad. The decision to leave the European Union has the potential to leave no part of our lives untouched, and the natural world is no different in this respect. The election of a climate change sceptic as US president does not bode well for biodiversity at a global scale. These seismic shifts in the external world cast doubt over the continued protection of important species and habitats, and the future management of our countryside and seas, previously determined through EU legislation and policies. The *State of Nature 2016* report found that ecosystems in Wales are degraded, and not connected or functioning at a healthy level. This is not only bad news for nature but for us humans too, relying as we do on a healthy, high quality environment for clean air and water, the food we eat and many of our livelihoods, as well as the value and enjoyment we get from nature and green spaces.



Whilst this all sounds incredibly downcast, I do believe that there is hope for a brighter future for Welsh wildlife. So if there is a silver lining, where will we find it? What are the opportunities and who needs to be involved?

Welsh Government actions

We all have a role to play – Welsh Government and the Assembly, Natural Resources Wales (NRW), conservationists and the public. I'll start with Welsh Government. I'm really heartened by their intentions. The good words in the new Well-being of Future Generations and Environment (Wales) Acts collectively set Wales up to succeed in maintaining and enhancing a biodiverse natural environment. This should provide healthy, functioning and resilient ecosystems and permit sustainable management of natural resources. In my view, in a world without EU regulation, these two pieces of legislation leave Wales well-placed to lead the rest of the UK in securing a positive future for our natural environment.

However, actions speak louder than words, and we have yet to see Welsh Government systematically delivering on these ambitions or across all government departments. We've had a number of false starts, including: Welsh Government continuing to press for the construction of a new stretch of the M4 across the Gwent Levels; failing to introduce a ban on shooting of globally endangered Greenland white-fronted geese despite the advice of NRW and conservation organisations, and against public opinion; and a lack of ambition and urgency in getting marine protected areas designated. To turn this around we want to see Welsh Government committing explicitly to halting the loss of biodiversity by 2020, if we are to meet the Convention on Biological Diversity target, and setting clear biodiversity policies. These should have

Blaise Bullimore

Will future generations enjoy a more vibrant marine environment than we currently see, with designated protected areas?

an explicit link to the Nature Recovery Action Plan in the developing Natural Resources Policy to be delivered through the new Area Statements.

After Brexit

As we enter critical stages of the negotiations on the UK's Brexit position, Welsh Government and Plaid Cymru jointly published the Government's Brexit White Paper, *Securing Wales' Future*, in January 2017. I am reassured to find that the value of the Welsh environment has been recognised in that document, and RSPB Cymru strongly welcomes statements by Lesley Griffiths, Cabinet Secretary for the Environment and Rural Affairs, that the Welsh Government's intention is to enhance, not downgrade, environmental protections.

The White Paper also focuses on the other two key areas – agriculture and fisheries. With over 80% of our landmass in Wales being farmed, reforming the EU Common Agricultural Policy (CAP) is hugely important for wildlife. Brexit offers Wales the opportunity to do things better. There is now an increased appreciation and political appetite for a more integrated and sustainable approach to land management, in which payments to farmers should move to better recognising the delivery of public

Charlesjsharp CC-SA 4.0 International

Andy Hay, RSPB images

Like many farmland birds the yellowhammer (*Emberiza citrinella* Bras melyn, left) and corn bunting (*Emberiza calandra* Bras yr ŷd, right) are in decline; could their fortunes reverse with a change in farm management?

goods – clean water, air, soil and a thriving natural environment for wildlife and people – as well as the production of food.

Traditionally seen as opposing forces, a growing proportion of the Welsh farming sector, especially those smaller farmers in the uplands who feel less well represented by the farming unions, are currently aligning, along with conservationists, politicians and civil servants, behind these principles for a more sustainable future. The writing is on the wall for the old system of payments simply for production or hectareage, and there are genuine wider societal and environmental opportunities to be realised. This will require us all to hold our nerve, the farming sector and the unions to grab the nettle, and Welsh Government to be the driver for this new and better approach. The last thing we want is to end up with a fudged result that doesn't deliver for either our farmers or our wildlife. Similarly, as we prepare to extract ourselves from the EU Common Fisheries Policy (CFP), Welsh Government needs to work with the other governments of the UK to develop new fisheries laws that will deliver the UK's shared vision of clean, healthy, safe, productive and biologically diverse oceans and sea. As on land, a new approach to fisheries management must be integrated with our domestic and global commitments to protect marine species and designate important habitats. Fish and shellfish don't respect national borders, and this shared resource will need to be managed in partnership with our neighbours, both within and outside the UK, to ensure a sustainable future for both the marine environment and the fishing sector in Wales.

Beefing up NRW

NRW has a key role to play, and it must be enabled to step up and be an independent champion for nature. It needs the resources to designate, manage and protect sites for nature both on land and at sea – it is their responsibility to ensure designated sites are in favourable condition and deliver for our priority species. These are essential building blocks for achieving the sustainable management of natural resources. This also requires a greater investment in evidence collection through surveying and monitoring, and ensuring adequate staff capability and expertise to support nature protection and well informed advice-giving. We have seen the results of pressures on NRW's budget with reduced activities for nature, including cessation of field teaching operations and the withdrawal of support for *Natur Cymru*. To my mind, this is a false economy. A strong, active NRW will be of benefit to nature and to Government decision-making, and subsequently to the people of Wales, through achieving more sustainable outcomes.

People Power

In such challenging times, I often reflect on what more I could do, or do differently, to help save nature. As conservationists we can either continue as we are, winning the odd battle but, on the whole, watching the slow decline of nature. Or we can embody that appetite for change. I am buoyed when I think that well over half a million people wrote to the European Commission to support the EU Birds and Habitats Directives (over 100,000 from the UK) - and the Commission listened. It's a clear indication of just how important biodiversity and special places are for people. We need to build on this show of support. As a sector we must up our game, and the good news is that we are increasingly seeing conservation organisations coming together in new and innovative partnerships for nature.

Eleanor Bentall (rspb-images.com)

Could there be a new way of managing our uplands?

Wales appears determined to do things differently to reshape the policy debate around our natural resources. The findings of the *State of Nature 2016* report made waves in the Assembly, sparking a cross-party debate on the condition of Welsh wildlife. This consensus must now ignite Welsh Government to turn intention into action: they must drive forward progressive policy change to create the large-scale change required to avert impending crisis and make the most of the forthcoming opportunities. As a sector we are doing all we can to help shape this debate and to demonstrate good practice. But it will need all of us, working together, if we are to truly realise the ambitions. So let's take a deep breath and make 2017 a year of hope for nature.

***Dr Sharon Thompson** is Head of Conservation at RSPB Cymru.*

RSPB Cymru

All photos: Blaise Bullimore

All at sea

Marine nature conservation in Wales: gloom or hope?

Crawfish were overfished to near commercial extinction around west Wales by the 1980s; numbers of juveniles sighted are slowly increasing in Skomer MCZ.

The vulnerability of the marine environment has come into focus over recent decades, and the rise in conservation efforts should help those charged with protecting Welsh seas from damaging human activities. In his third review of nature at sea ***BLAISE BULLIMORE*** *reports that there is still a long way to go.*

In previous editions of *Natur Cymru*[1] I described efforts to win support for nature conservation at sea, the implosion of a planned series of Marine Conservation Zones (MCZs) and the role of monitoring in filling in gaps and opening eyes to what is happening in the natural world below the waves. On receiving an invitation to update the story I suggested publishing two blank pages. Though cynically capturing the bigger picture, this would have been too hard on the glimmers of light from local good work. Those bright spots are not new though, they are mostly developments and results from many years' efforts.

The brightest spot remains Skomer MCZ[2], the most actively managed, comprehensively monitored and effective Marine Protected Area (MPA) in Wales. But the protection afforded by its designation is limited; except for scallop dredging and beam trawling, fishing continues. Monitoring gives a reasonable handle on how species and habitats are faring; some are OK, others are not. Scallops, sedimentary habitats and seagrass benefit from clear statutory protection measures and are healthy and stable or improving. Seafans however, one of the MCZ's

iconic residents, have been decreasing slowly for years, and numbers in one remote area of the MCZ took a tumble in 2016. It's impossible to be sure why, but lobster potting is the only human activity in the impacted area. There is still no unimpacted area in Wales that can be studied to demonstrate the outcomes of protection; the MCZ would provide the most easily monitored 'control' area for researching the impacts of human activities.

One of 'Neptune's Army of Rubbish Cleaners' cutting free a lobster from a line

Skomer MCZ covers a tiny area of Wales' seas, yet its future remains insecure despite its designation and successes. Welsh Government (WG) wrote to Natural Resources Wales (NRW) in June 2014 stressing its "expectation that NRW will continue to maintain an effective management regime for Skomer MNR as a Marine Conservation Zone" after introduction of the Marine and Coastal Access Act (MCCA) and transition to an MCZ. Nevertheless, in April 2016 NRW wrote to the MCZ's Advisory Committee chairman to advise that after becoming an MCZ "our statutory responsibilities to undertake [management] activities have now ceased." Whilst technically correct, it suggests a disregard for WG's "expectation", both undermining public confidence that the MCZ will continue to be actively managed, and generating great uncertainty for its staff.

Sea snail pace

European Marine Site (EMS) management groups and site officers perform an invaluable enabling role, in spite of obstructiveness from Welsh Government and NRW: assessing pressures, threats and management requirements, enhancing working relationships, building awareness, and continually appraising management activity. Nevertheless, few tangible practical actions have been introduced. The protection of seagrass beds in Milford Haven and Porth Dinllaen from anchoring, which should be fairly straightforward, has required years of effort. Despite decades of documenting impacts and years of dialogue, the best bait collection control measure yet secured for the Gann Estuary, Milford Haven, is a code of conduct.

The UK's 2014 EMS report shows that the status of all five major marine habitats in Wales was 'unfavourable'. Of these, three were assessed as still getting worse. Although a negative measure of success, it is likely that their condition would have been still poorer had EMS management efforts not held back the tide.

A comprehensive 2012 MPA management appraisal for Welsh Government concluded that Wales' MPAs were failing to achieve favourable status because of "lack of effective management"; this review has not been superseded. Since then, NRW's responsibilities have been reduced by MCCA, and Welsh Government's increased. Yet WG looks to others to cover their inaction, fails to take a lead, and stimulates displacement activities. Safeguarding the sea seems to be at the bottom of their to-do list.

Words not action

Marine conservation is certainly being more talked about; indeed, rhetoric approaches industrial scale. Deceptively positive stock phrases trickle from Welsh Government at intervals, regardless of contemporary ministerial (now cabinet secretary) title, portfolio or incumbent. Marine statements routinely assure us of their commitment – a consequence of being

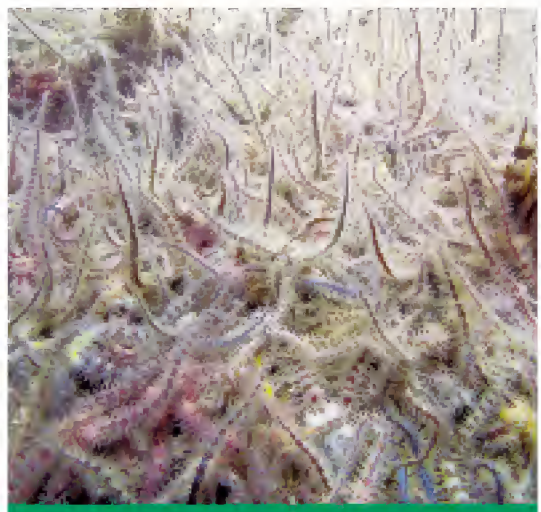
Volunteer citizen science supporting *Echinus* monitoring in Skomer MCZ

signatory to the 2011 UK Marine Policy Statement – to an "ecologically coherent, well-managed network of MPAs".

What Welsh Government means by 'well managed' is unclear, particularly in the now mandatory frames of 'natural resource management', 'blue growth', the constant demand to achieve unachievable 'balance' to deliver the holy grail of 'win-wins', and with NRW tripping over itself to show it's not letting environmental protection stand in the way of economic development.

The degree to which Welsh seas are 'protected' is repeatedly talked-up. The extent of Wales' MPAs is frequently implied to be considerably greater than they are, with multi-counting of locations that carry two, three, and even four designations. MPA designation is consistently implied as synonymous with protection: it isn't. Nevertheless, the Cabinet Secretary has outrageously claimed that, because of the MPA designations, Welsh seafood is "by its very nature, sustainably sourced". New advisory groups, assessments and reviews have also proliferated.

A WG-convened MPA Management Steering Group has been quietly working under the public radar and at snail's pace. Its members with an EMS background appear to have gradually influenced WG mindsets, neutralised the least ambitious NRW and Welsh Government proposals, and secured agreement for the minimum necessary MPA conservation staffing. However, WG marine staff continually play musical chairs; as soon as one gets up to speed they move on, and the resources to deliver agreements are unavailable.



Brittlestars *Ophiothrix fragilis*

Sea slugs *Polycera faeroensis*

Butterfly blenny *Blennius ocellaris* thrives in stable, undisturbed sediment and gravel where they shelter in big, old whelk or scallop shells, and brood their eggs - the bright orange blobs lining the edges of the shell.

New MPAs for porpoises have just been proposed to the EU, others for seabirds have been designated and a network 'gap analysis' of whether sufficient other habitats and species are included in MPAs has just reported. But this focus on completing an ecologically coherent network, gap filling and new designations has obscured and distracted from the lack of management and safeguard of what is already designated. Arguably, too much effort is being expended designating more sites at the expense of managing those we already have.

Pressures unabated

Welsh Government has begun a project to prioritise habitats and species for restoration. Whilst tacitly acknowledging environmental degradation, this is no substitute for environmental protection. There is little point expending effort and resources if the pressures that caused the degradation are allowed to continue unabated; effective safeguard of habitats and species is an essential prerequisite to successful restoration. We simply have to remove, or at least minimise, anthropogenic disruption and allow the seas to sort themselves out – as they have managed to do for millions of years just fine without our help.

There is no room here to explore marine spatial planning, NRW's 'Prioritised Improvement Plans', Wales Marine Strategy Advisory Group and a host of fairy-dust processes. But what substantive, in-the-water conservation action have all these displacement activities actually achieved for marine nature conservation? Vanishingly little.

The gap between hype and reality is well illustrated by the issue of scallop dredging in Cardigan Bay. An optimistic glimmer of hope for improvement of reef habitats hung on the presumption of natural recovery following the 2010 closure of sensitive locations to scallop dredging. So it's scandalous that £100,000s of grant-aid was channeled by Welsh Government to collect information to support an increase in scallop dredging – well known to be one of, if not the most damaging fishing technique in UK waters – within a 'Special Area of Conservation', and that Welsh Government has decided to open more areas to dredging when the information showed that management of the existing open area had neither protected scallop stocks nor seabed habitat. Clearly, fishing interests still reign supreme and out-trump the greater public interest.

Is there public interest in better protecting Wales' marine wildlife? Given the over-subscription to MCZ's annual citizen science monitoring projects, the numbers of Seasearch volunteers willing to give their time and get trained at their own expense, and the many individuals only able to express themselves through petitions which fall on deaf ears, the conclusion is yes, there is. But is Welsh Government listening to their voices, or just those of noisy, vested interests?

Why is protecting Wales' marine environment so

poorly prioritised by Welsh Government? Lack of genuine commitment? Obsession with short-term economics? Disbelief of evidence? Genuine ignorance of the need? It's certainly vital that WG is provided with honest and accurate information by NRW, not positive spin. Headline statements like "29% of our estuarine and coastal waters water quality is good or better" are disingenuous (what about the other 71%?) and only whisper, rather than roar, the wake-up call that is desperately needed.

Sea slug *Coryphella lineata* & Light bulb sea-squirt *Clavellina lepadiformis*

At the time of writing, the National Assembly's Climate Change, Environment and Rural Affairs Committee has just begun an inquiry into MPA management in Wales. Should we be optimistic? I'm still not holding my breath.

Blaise Bullimore *was Skomer MNR's first manager and later a European Marine Site Officer for a decade. He now manages projects for the Milford Haven Waterway Environmental Surveillance Group and is still an active Skomer MCZ scientific dive team volunteer and member of 'Neptune's Army of Rubbish Cleaners'.*

Notes

1. *Natur Cymru* 47, pp4-10; *NC* 48, pp48-49; *NC* 50, pp22-27
2. Formerly Marine Nature Reserve until re-designated as MCZ when the MCZ provisions in the Marine and Coastal Access Act (MCCA) 2009 were commenced in Wales in December 2014

Triggerfish *Balistes capriscus*

Croeso i Amgueddfa Cymru, Bryn the Tiger!

In August 2016 the Natural Sciences department at Amgueddfa Cymru–National Museum Wales welcomed Bryn the Sumatran tiger to its collections. Bryn, 17 years old, lived at The Welsh Mountain Zoo in Colwyn Bay and was one of the Zoo's most iconic animals. His gentle, steady ways made him a great animal ambassador for his species and many visitors were able to observe and experience him up close. He had a relaxed and amiable personality, and so was a key part of the Zoo's 'Keeper for a Day' and 'Animal Encounter' experiences. His startlingly perfect looks gave pleasure to all the Zoo's visitors, raising the profile of the plight of Sumatran Tigers, which are critically endangered.

The Sumatran tiger *Panthera tigris sumatrae* is endemic to the Indonesian island of Sumatra and is the subject of intensive worldwide conservation efforts. Its numbers have continued to decline over recent years, despite these efforts, and it is estimated that less than 400-500 tigers remain in the wild, living in isolated populations. Habitat loss, illegal trade and prey-base depletion have all contributed to this.

The tigers live in a wide range of forest habitats, from the coastal lowlands to mountains, preferring undisturbed, non-cultivated forests with dense understoreys and steep slopes. Millions of acres of forest are cut down every year to make way for intense crop plantations such as oil palm *Elaeis guineensis* and acacia. This has led to tiger populations becoming fragmented, and larger areas are required to conserve viable populations. The illegal trade in tiger parts is still common despite full national and international protection, and tiger parts are still sold on Sumatra. It is pertinent now, more than ever, to keep a record of this species. Museums play an important role as storehouses of biodiversity, keeping a record of a species for posterity. Many extinct animals like the thylacine (Tasmanian wolf *Thylacinus cynocephalus*), and great auk *Pinguinus impennis* feature in our collections.

But why have a Sumatran tiger in a Welsh museum? Iconic specimens are an important part of museum collections. Vertebrates get far more public attention than any other group of animals or plants. They are often cute and eye-catching, and so become the symbols of campaigns to raise public awareness of conservation issues. These specimens can be used to hook public attention and generate interest in the world around them. As a free-entry venue, we are ideally placed to engage people with the natural world. Often museums are one of the first places that children encounter wildlife up close. This puts us in a fantastic position to talk about the threatened wildlife, not just abroad, but on our own doorstep. These big showy animals are the 'gateway animals' to perhaps less ostentatious, but equally endangered species such as the freshwater pearl mussel *Margaritifera margaritifera*, the high brown fritillary butterfly *Fabriciana adippe* or the wart-biter cricket *Decticus verrucivorus*. Be it a tiger in Sumatra, or a turtle dove in the UK, the message is the same. We aim to make our visitors more aware of the natural world around them and to empower them to take a more active role in both enjoying and preserving it.

So it seems, even in death, Bryn will continue his legacy. He will be an iconic specimen for people to enjoy and learn from for many generations to come.

***Jennifer Gallichan**, Curatorial Assistant, Amgueddfa Cymru–National Museum Wales.*

One of the smallest tiger subspecies, the Sumatran tiger differs from its Indian and Javan cousins, with darker fur and thicker, more numerous stripes. Males also have a prominent ruff around the neck.

Erbyn heddiw gelwir lili'r Wyddfa yn *Gagea serotina* ond yn wreiddiol fe'i henwyd yn *Lloydia serotina* ar ôl Edward Llwyd, a'i darganfyddodd yn Eryri, ei hunig leoliad yn y DU.
The Snowdon lily, now *Gagea serotina*, was formerly named *Lloydia serotina* after Edward Llwyd, who discovered it in Snowdonia, its only UK location.

ukwildflowers.com

Natur yng Nghymru – trem hanesyddol

***TWM ELIAS** sy'n bwrw trem yn ôl ar agweddau gwahanol tuag at fyd natur a ddatgelir gan ganrifoedd o ddogfennau, o lysieulyfrau canoloesol i'r cylchgrawn Y Naturiaethwr a gyhoeddir heddiw.*

Yn sicr mae ein hamgyffred o fyd natur wedi newid dros y canrifoedd, gan adlewyrchu'r newidiadau fu yn ein ffordd o fyw ac yn natur ein perthynas â'r tir. Yn y Canol Oesoedd a hyd at yn lled ddiweddar edrychid ar yr amgylchedd naturiol fel cwpwrdd adnoddau at ddefnydd amaethwyr, coedwigwyr a helwyr. Prin y cyflwynir natur fel arall oni bai am gymariaethau yng nghywyddau'r beirdd, ee rhwng harddwch blodau â thlysni merch neu gyffelybiaeth lawer mwy gwreiddiol Dafydd ap Gwilym o wylan fel dyrnfol heli[1].

Gwelwn agwedd ein cyndeidiau at fyd natur yn yr enwau a roddwyd, neu na roddwyd, ar greaduriaid a phlanhigion. Fe'u henwyd yn ôl eu defnyddioldeb yn fwy na dim. Hynny yw, haeddant enwau os oeddent yn fwytadwy, yn feddyginiaethol, yn ddefnyddiol mewn rhyw ffordd arall neu'n bla. Os nad oeddent yn ddefnyddiol ni thrafferthwyd rhoi enwau arnynt. Dyma pam fod cyfoeth aruthrol o enwau ar blanhigion ac ychydig iawn ar bethau oedd yn 'dda i ddim', fel mwsoglau, ffyngau a phryfed.

Mae disgrifio rhinweddau planhigion yn hen iawn, fel y gwelwn o lysieulyfrau meddygol y Canol Oesoedd[2]. Chwilio am blanhigion meddygol newydd oedd cymhelliad yr Edward Llwyd ifanc yn Llanforda ddiwedd y 17eg ganrif. Daeth Llwyd yn un o naturiaethwyr amlycaf Ewrop yng ngwawr Oes yr Ymoleuad, ar gychwyn y broses hir o ddisgrifio a chatalogio byd natur yn wyddonol.

Esgorodd system ddeu-enwol syml Linnaeus, yn 1735, ar frwdfrydedd cryf dros ddisgrifio byd natur ymysg y dosbarth canol dysgedig ac yn arbennig ymysg offeiriaid yr Eglwys Wladol. Efallai bod amser i'w sbario ganddynt yn rhinwedd eu swydd. Enghreifftiau nodedig yw Gilbert White[3], oedd yn llythyrwr cyson â'r naturiaethwr o Gymro Thomas Pennant, awdur *British Zoology* (1770), sef yr ymgais gyntaf i ddisgrifio bywyd gwyllt gwledydd Prydain. Cyfeillion eraill i Pennant oedd Lewis Morris a gofnododd lawer am fywyd gwyllt yn ei lythyrau[4] a'r botanegydd Hugh Davies[5], oedd yn Rheithor Biwmares rhwng 1778 ag 1816. Prin iawn iawn yw'r gweinidogion anghydffurfiol a gyfrannodd yn yr un modd - tueddant hwy i gyfyngu byd natur i farddoniaeth a moeswersi yn eu pregethau.

Erbyn Oes Fictoria ceid nifer o fotanegwyr a phryfedegwyr amatur blaengar, rhai ohonynt yn gasglwyr brwd ar flodau, rhedyn, gwyfynod ac wyau adar. Ni feddylid ddwywaith am saethu aderyn prin i'w stwffio fel troffi. Daeth casglu planhigion a rhedynau'n elfen bwysig o'r diwydiant twristiaeth gynnar a gwnâi tywysyddion lleol fywoliaeth o'u cynorthwyo[6]. Rhoddodd y casglwyr hyn inni gorff sylweddol o ddata biolegol gwerthfawr ac enwau gwych yn Saesneg ar wyfynod a sawl grŵp arall.

Heblaw am *Welsh Botanology* Hugh Davies a *Faunula Grustensis*, John Williams (1830), prin iawn yw'r enghreifftiau Cymraeg o gofnodi byd natur yn wyddonol am mai Saesneg oedd iaith addysg ffurfiol y cyfnod. Er y cyfieithwyd nifer o gyfrolau swmpus ar fyd natur a gwyddoniaeth i'r Gymraeg[7,8], parhâi diddordeb y Cymry yn yr ymarferol, fel y gwelwn o'r nifer fawr o lysieulyfrau meddygol a milfeddygol Cymraeg a gyhoeddwyd drwy'r 19eg ganrif. Ar y cyfan, cedwid cyfeiriadau at natur i weithiau'r beirdd; cofnodion ffenolegol mewn dyddiaduron amaethyddol[9] ac erthyglau am greaduriaid rhyfedd y byd yng nghylchgronau Cymraeg niferus y cyfnod[10]. Gwaetha'r modd, gwaharddwyd y Gymraeg o'r gyfundrefn addysg wladol newydd yn 1872 a phan sefydlwyd Prifysgol Cymru yn yr un flwyddyn Saesneg yn unig oedd cyfrwng dysg. Collwyd cyfle aruthrol.

Parhaodd cyhoeddi am fyd natur yn y Gymraeg mewn cylchgronau megis *Cymru*, O M Edwards[11], *Cymru'r Plant*[12], a chyfresi o lyfrau darllen i ysgolion gan Richard Morgan yn negawd gynta'r 20fed ganrif[13]. Llyfrau eraill gwerthfawr a gyhoeddwyd yr adeg hon oedd *The Birds of Breconshire*, P E Cambridge (1899); *Adar Ein Gwlad*, John Ashton (1907) a chlasur H E Forrest, *The Vertebrate Fauna of North Wales* (1907). Llyfrau eraill am Gymru oedd *Bird Life in Wild Wales*, gan y casglwr wyau nodedig J A Walpole-Bond (1903) a *Wild Life in Wales*, George Bolam (1913).

Ar ddechrau'r 20fed ganrif gwelwn ddeuoliaeth yn agwedd pobl tuag at fywyd gwyllt. Ar un llaw arbenigai rhai ar gasglu wyau ayyb, tra, ar y llaw

Birds' nests, eggs and egg-collecting gan Richard Kearton 1862-1928. Ar un pryd roedd casglu wyau'n ddifyrrwch cyfarwydd iawn.
Collecting wild bird eggs was once a widespread hobby.

Darluniau o'r gyfres *Wayside and Woodland* gan Edward Step. Illustrations from the *Wayside and Woodland* series by Edward Step.

arall, credai eraill yn eu gwarchod, ee, aelodau'r *Kite Committee* a sefydlwyd yn 1903 i amddiffyn nythod y barcud. Y pwyllgor hwn a'i olynydd, Ymddiriedolaeth Farcutiaid Cymru, yw'r sefydliad gwarchod un-rhywogaeth hynaf yn y byd.

Roedd ciperiaid ac eraill yn barod iawn i ddifa unrhyw anifail neu aderyn a ystyrid yn fygythiad i helfa'r stadau neu'n difrodi cnydau. Adeg y Rhyfel Byd 1af sefydlwyd Clybiau Difa Adar To[14] ledled y deyrnas gydag anogaeth gref i blant chwarae eu rhan. Un o'r mwyaf llwyddiannus oedd y *Newmarket and District Sparrow Club*, a ddinistriodd 41,769 o adar to a'u hwyau yn 1916-17. Roedd hon yn ymgyrch ddadleuol iawn, gyda'r Ysgol Sul yn arwain y gad yn ei herbyn yng Nghymru.

Datblygiad arall pwysig oedd sefydlu cymdeithasau byd natur a hynafiaethau. Un o'r cynharaf oedd y Cardiff Naturalists Society (1867); y Dyserth and District Field Club (1911) a'r Anglesey Antiquarian Society & Field Club (1911). Mae eu trafodion yn drysorfa o gofnodion byd natur a bu rhai o'u haelodau yn gyfrifol am gyhoeddi sawl Flora leol bwysig[15].

Rhwng y ddwy ryfel cynyddodd y diddordeb mewn byd natur pan ddaeth y camera 'bocs brownie' a'r ysbienddrych yn boblogaidd a phan gyhoeddwyd llyfrau adnabod y *Wayside and Woodland Series*.

Daeth gweithiau awduron megis R M Lockley; ffotograffwyr fel Eric Hoskins a nifer o golofnwyr natur mewn cylchgronau a phapurau newydd megis Bill Condry yn boblogaidd. Seren colofnau Cymraeg y cyfnod oedd T G Walker, Prifathro Ysgol yr Henblas, Môn.

Wedi'r Ail Ryfel Byd newidiodd pethau'n gyflym. Sefydlwyd y *Nature Conservancy* yn 1949, Parciau Cenedlaethol ar ddechrau'r 1950au a chododd Ymddiriedolaethau Bywyd Gwyllt a chlybiau adar y sector wirfoddol ar draws Cymru. Rhoddodd hyn gyfleoedd newydd i ymddiddori ym myd natur; i gyfrannu at ymchwil ac i wirfoddoli yn y nifer cynyddol o warchodfeydd natur, dan reolaeth statudol a gwirfoddol, o hyn ymlaen.

Er hynny, parhaodd casglu wyau adar yn boblogaidd ymysg plant ac roedd *The Observer's Book of Bird's Eggs* yn un o'r mwyaf poblogaidd yn y gyfres nodedig honno yn y 1950au. Daeth newid mawr pan ddaeth teledu i gartrefi pobl yn yr 1950au/60au ac mae'n ddadlennol sut y trodd y rhaglenni antur cynnar am hela *big game* yn Affrica a dal creaduriaid gwyllt i Sŵ Llundain (*Zoo Quest*, y David Attenborough ifanc) yn rhaglenni oedd yn cyflwyno gogoniant natur ee *On Safari*, Armand a Michaela Denis. Arhosodd cyfresi David Attenborough, er yn iwtopaidd yn wyneb argyfwng amgylcheddol y byd modern, yn hynod boblogaidd hyd heddiw. Pan sefydlwyd rhaglen radio Gymraeg, *Seiat y Naturiaethwyr*, i ymateb i ymholiadau'r cyhoedd am fyd natur yn 1951, milfeddyg, garddwr, athro ysgol a swyddog pla oedd y panelwyr. Nid oedd naturiaethwyr proffesiynol Cymraeg yn bod bryd hynny - mor wahanol i raglen *Galwad Cynnar*, Radio Cymru heddiw - olynydd di-dor bron i'r hen Seiat.

Newidiodd agweddau pobl tuag at fyd natur yn sylweddol yn yr 1950au/60au gyda nifer cynyddol o lyfrau, cylchgronau a rhaglenni teledu i danio'r diddordeb. Eto fyth cadw'u pellter wnâi'r mwyafrif o Gymry Cymraeg cefn gwlad oddi wrth y naturiaethwyr academaidd a di-Gymraeg yn bennaf. Dyma pryd y profodd cyfraniad unigolion megis yr awdur toreithiog, ffotograffydd, darlledwr a darlithydd, Ted Breeze Jones (1929-1997), Evan Roberts, Iori Ellis Williams a Wil Jones oedd yn

wardeniaid gyda'r Cyngor Gwarchod Natur a'r adarwr Peter Hope Jones yn allweddol i boblogeiddio byd natur drwy gyfrwng y Gymraeg. Cyrhaeddodd Peter Hope Jones fri rhyngwladol trwy ei astudiaethau gwyddonol trwyadl a diflino.

Cam mawr ymlaen oedd ffurfio Cymdeithas Edward Llwyd yn 1978, drwy weledigaeth Dafydd Davies, Prifathro Ysgol Rhandirmwyn, a daeth cylchgrawn y gymdeithas, *Y Naturiaethwr*, yn gyfrwng pwysig a safonol i ymdrin â byd natur yn Gymraeg. Sefydlwyd Panel Enwau i ddarparu enwau safonol ar greaduriaid a phlanhigion a thermau amgylcheddol, gwasanaeth a fu'n allweddol i hwyluso dwyieithrwydd sefydliadau a chyrff amgylcheddol yn ddiweddarach. Yn 1998 lansiwyd Llên y Llysiau gyda'r bwriad o gyfuno gwybodaeth hanesyddol, ddiwylliannol ac ecolegol am blanhigion ac yna, yn 2009, gwefan ryngweithiol a chynhwysfawr Llên Natur (www.llennatur.com) i gofnodi, trafod a darparu llwyfan gwerthfawr i 'wyddoniaeth y bobl'.

O'r 1960au ymlaen gwelwyd twf rhyfeddol yn nifer y cymdeithasau gwirfoddol yn ymwneud â chofnodi a gwarchod ein bywyd gwyllt a daethom yn fwy a mwy ymwybodol o beryglon colli cynefinoedd a newid hinsawdd. Gallwn olrhain y newid ar dudalennau *Nature in Wales* (1955-86) a *Natur Cymru* (2001-17). Roedd pwyslais gwreiddiol *Nature in Wales* (cylchgrawn y West Wales Field Society) ar gofnodi, ond tyfodd yn gyfrwng cenedlaethol i rannu gwybodaeth a chyfnewid syniadau, rôl a ddatblygwyd ymhellach gan ei olynydd, *Natur Cymru*.

Yn sicr mae angen dybryd am gylchgrawn cenedlaethol i gyflwyno ffrwyth ymchwil a thrafod materion amgylcheddol yn Gymraeg a Saesneg. Mae'r angen yn fwy fyth yn wyneb ansicrwydd y dyfodol wrth i Lywodraeth Prydain ymadael â'r Undeb Ewropeaidd a hepgor ei pholisïau amgylcheddol cryf. Trueni felly gweld diwedd *Natur Cymru*. Gedy fwlch mawr ar ei ôl – bwlch na adewir yn hir heb ei lenwi gobeithio.

*Mae **Twm Elia**s yn gysylltiedig â nifer o brosiectau amgylcheddol / cymunedol, gan gynnwys Cynefin a Chymuned a Llên Natur. Arferai fod yn ddarlithydd ac yn drefnydd cyrsiau ym Mhlas Tan y Bwlch, Canolfan Astudio Parc Cenedlaethol Eryri.*

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The history of nature in Wales

Historic attitudes to nature are seen in the names given – or not given – to plants and animals. Food, tools, textiles or dangers, were given names while the majority of insects, fungi and mosses were considered irrelevant. The introduction of the Linnaean system of naming saw the learned middle classes, including Welsh naturalists such as Thomas Pennant, Lewis Morris and Hugh Davies, begin to study nature for its own sake. Sadly, they wrote mainly in English, leaving Welsh language contributions to come from poetry and agricultural journals.

Attitudes to nature have gradually changed. Collecting wild bird eggs was once a widespread hobby but is now illegal, and television has introduced people to a world they might not otherwise have known. A new generation of Welsh naturalists such as Ted Breeze Jones, and the founding of Cymdeithas Edward Llwyd in 1978, have interpreted nature in Wales in a unique way. Llên Natur (www.llennatur.com) collects historical, cultural and ecological information and provides an important forum through the medium of Welsh.

A full translation of this article can be found on our website www.naturcymru.org.uk

Marcher Apple Network: an update

Wade Muggleton

Paramor orchard at Cwmdu, near Crickhowell

***STEPHEN AINSLEIGH RICE** reports on the progress of the Marcher Apple Network.*

In the Autumn 2004 issue of *Natur Cymru* (NC 12:37), Sheila Leitch described how the Marcher Apple Network (MAN) was seeking, identifying and conserving traditional varieties of apples local to the Welsh Marches region. It is pleasing to report substantial progress as the Network has matured.

We have now planted nearly 600 trees of over 350 varieties in our six museum orchards, four of which are in Powys. Paramor Orchard, at Cwmdu near Crickhowell, was purchased in 2006 with generous funding from a member. It is now home to probably the largest collection of apple varieties native to Wales and the Welsh Marches, with more than 130 local varieties, including recent finds Gabalva and Wormsley Pippin.

Our search for old varieties continues. We are ever hopeful that the public will bring a lost variety for identification to a local (autumn) show, including those at Talgarth, Cefn Ila and Chepstow. But we are also delighted to listen to recollections past, such as favourite apples scrumped on the way home from school. We continue to encourage the public to send us varieties for identification by post (details on our website), though our rates have increased to £5 for members and £10 for non-members, reflecting an increase in costs. Visits to old orchards have decreased but there are still valuable discoveries to be made. Whenever we encounter a variety we aren't sure about, we will ask the owner for graft wood; Paul Davis at Dolau-hirion Nursery grafts this for us. A few years later the young tree will produce healthy apples for us to examine at our identification sessions, held in Glasbury-on-Wye. From initial promising glimpse to identification can take a long time!

An illustrated booklet *Apples of the Welsh Marches*,

listing local varieties, was published in 2002 (with revisions in 2004 and 2006). MAN has also published *Welsh Marches Pomona* by Mike Porter, with beautiful watercolour illustrations by Margaret A V Gill, which provides accounts of 30 local varieties previously not fully described. All of these are conserved at Paramor. The wild plants at Paramor have been lovingly observed and described by Margaret in an illustrated booklet. We are trying to manage the orchard in a way which fosters its biodiversity. Yes, it's a thrill to hear the cuckoo there!

Identifying apples

Our main method of identification remains making careful comparison of the external and internal character of apple samples with descriptions in classic texts, such as the *Herefordshire Pomona* (a CD of which is available via MAN) and illustrated databases such as those compiled by John Savidge and the fruitID website (www.fruitid.com). Whatever method is employed, a lot of care and cross-checking is required. Recently, though, we've been aided by DNA analysis; last year it was so useful that we plan to repeat the exercise in the near future.

In 2016 we submitted 168 varieties from our orchards and found that 60 of them were unique, meaning we were the first to have submitted a specimen for analysis. These included several Welsh varieties such as Brithmawr, Pig-yr-ŵydd and Machen. Hughes' Carnation, mentioned in Sheila's article, is now considered to be a Herefordshire apple called Bridstow Wasp. Some with Welsh names have proved indistinguishable from other named varieties e.g, Pig-y-glomen which appears to be genetically identical to Warner's King. Welsh varieties have proved to be particularly difficult to identify because few are described in pomological literature and even fewer have been included in museum collections such as the National Fruit Collections at Brogdale, or those of the Royal Horticultural Society (RHS) at Wisley.

Over the last 20 years, there has been growing awareness of the importance of orchards for biodiversity and conservation of old varieties. MAN continues to run courses on pruning, grafting and apple identification, giving ample opportunity to practise orchard skills. MAN works closely with a number of Welsh organisations, including the Welsh Perry and Cider Society and National Botanic Garden for Wales. For many years we've collaborated with the Gloucestershire Orchard Trust, Worcestershire Orchards, RHS and National Fruit Collections at Brogdale. Among orchard groups there is a growing desire to collaborate and this is being facilitated and encouraged by bodies such as Peoples Trust for Endangered Species, National Trust, Natural England and fruitID.

Stephen Ainsleigh Rice

The MAN stand at the Three Counties Show

If you would like to join or if you have apples to be identified please contact us via chairman@marcherapple.net or visit www.marcherapple.net for more information.

Stephen Ainsleigh Rice *(Marcher Apple Network Trustee) 01497 820332*

Lizzie Wilberforce

Old fashions and new truths:

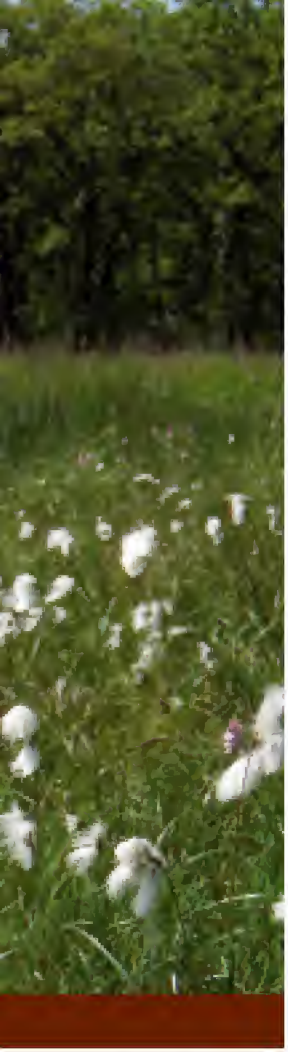
conserving biodiversity on land

Ensuring a place for nature in our landscape is about more than identifying sites of special scientific interest (SSSI) and preventing bad things from happening on them; it also depends on positive management. Legislative protection does not provide the resources to do the job, nor anywhere near full coverage of places important for nature. LIZZIE WILBERFORCE reviews some of the pressures on SSSIs and other important places for wildlife, and considers the challenges facing the nature conservation movement, not least the need to re-engage the public sector with site management.

Marshy grassland thriving on Ruth Watkins' farm in Carmarthenshire

Identifying and protecting our most important places for wildlife has been a concept fundamental to conservation in the UK for over a century. In 1912, Charles Rothschild proposed formal protection of such sites, laying the foundations for site-based conservation in a world previously focussed on the persecution or collection of threatened species (see *Natur Cymru* 59, pp4-9).

Since that time protection has evolved from private passion to statutory instrument, with the notification of SSSIs, and the establishment of National Nature Reserves (NNRs), open to people to visit, study and learn from. There has been a proliferation of advocates: central government, agencies, charities, local authorities and private individuals all have land that they would identify as kept primarily for the benefit of wildlife. Given the large number of sites now protected by law, greater understanding of our impact on wildlife, and the consequent growth in the environmental charitable sector, it would be reasonable to expect that protected sites should be going from strength to strength. Natural



history has moved from being the preserve of the wealthy to an interest accessible to all, and environmentalism has become a mainstream issue. Despite this, reports such as the *State of Nature*[1] document failure. The financial crisis of 2008 revealed an unpalatable truth: when public spending is under pressure, nature still suffers.

NNR investment slashed

Almost every sector has been affected by the global recession in some form, but we have seen this before. In the Nature Conservancy Council during the 1980s, funding was so short that staff were left without fuel for vehicles. Now, Natural Resources Wales (NRW), which is directly responsible for a large number of NNRs and for the condition of our SSSIs, has faced its own swingeing cuts. These in turn have been passed on disproportionately to its conservation sites, a fact starkly laid out in the results of a Freedom of Information Request I submitted to NRW in October 2016. I sought to compare current investment in NNRs with that in 2013, when the responsibility transferred from the Countryside Council for Wales (CCW) to NRW. The data showed that, in that timeframe, their financial investment in NNRs reduced from £2.2m to £1.4m (a reduction of 39%) and the investment in staff time fell by an even greater 46%.

Shocking as these figures are in their own right, the wider concern is that these changes are little more than a symptom of a deeper rooted problem: a creeping institutional disregard for the value of protected sites and for the knowledge, skills and resources that are necessary to protect them. The very wide remit of NRW has annexed conservation,

Land managers need to be competent in practical skills but also able to reconcile conflicting needs of priority species and to work with a range of partners and advisors.

with its largest legacy body, Environment Agency Wales, dictating the organisation's form and function. A large number of ex-CCW staff have left the organisation through their Voluntary Exit Scheme, with few posts being replaced. Many NNR staff have been lost, and there is no longer an upland or heathland specialist. Many specialists that remain have been assigned roles elsewhere, now unable to use the skills for which they were originally employed. Equally damaging, the organisation appears to regard all land management skills as equivalent, interchanging staff between commercial forestry and protected site management.

Perversely, the role of experienced conservation land managers has been devalued. We have progressed greatly in the publication of research-based species and habitat management and monitoring guidelines. However, the unique role of personal experience in conservation land managers, who are able to synthesise these detailed and often contradictory guidance documents and provide a holistic plan for a site, is too readily dismissed. The necessary pragmatism to reconcile the irreconcilable, when so

much is asked of a site, becomes the focus of criticism. The real problem lies in the circumstances that make it necessary to rely on these often small pieces of land for so many outcomes.

Outside the law

Many high-value wildlife sites don't enjoy the safety blanket of statutory protection. If they are in the hands of private individuals they may thrive, but equally they may be at risk of losing much of their wildlife. Neglect can be as damaging as intensification of land use. However, the importance of these non-statutory sites cannot be over-stated; sites protected by law were never intended as anything more than a suite representing the best of the best. High quality wildlife sites in the wider countryside are critical to the future of our wildlife, yet such sites are routinely under-valued in policy and planning.

Dr Ruth Watkins, who lives near Llanddeusant in Carmarthenshire, owns just such a site. A 70 acre farm on the edge of the Brecon Beacons, it is part SSSI, part unprotected, high wildlife value farmland. Although the farm has been in receipt of agri-environment funding, most of the high wildlife value of her land derives from her own time, energy and commitment, building on the fortuitous chain of historical ownership that allowed the site to escape intensive farming. Her own herd of Welsh blacks

graze the marshy grassland, and under her careful watch the animals are moved on and off sensitive land according to conditions. Many hours spent manually controlling brambles and other invading scrub also helps her many scarce plant species to thrive. The owners of wildlife-friendly farms of this kind have watched over the decades as other farm businesses have been subsidised to intensify, then subsidised to restore, whilst they themselves have received far less support. These sites play a critical role in maintaining connectivity and diversity in our countryside, and we are at risk of taking for granted the private investment of both time and money that have protected them so far.

Fortunately, some initiatives exist that support sites of this kind. The Pembrokeshire Coast National Park Authority offers grants, advice and, critically, face-to-face support for landowners of important sites within their area of operation. PONT is a government-backed scheme which has sought to bring together the owners

The Dranges, Gower – recently taken on by the Wildlife Trust, this site survived thanks to a sympathetic private owner.

of livestock with the owners of land in need of grazing, a 'marriage bureau' for the two groups. The success of such schemes is measured in the area of land brought into conservation management, but this is still modest compared to the scale of the challenge. Wildlife Trusts help identify and look for conservation solutions for the unprotected wildlife sites in their areas. Conservation-minded landowners have become an important force for better wildlife protection, often banding together into groups and sharing habitat management experience among themselves. These largely unsung owners of private nature reserves, though, still find themselves vulnerable not only to external economic influences but also, perhaps more critically, to the risks associated with the periodic necessity of land sale in the absence of safeguards for their efforts.

A great many of our wildlife sites now are in the hands of environmental non-government organisations (ENGOs). Particularly in Wales, the National Trust, Wildlife Trusts and RSPB are major players in this arena. The different organisational backgrounds of site managers is in itself a defence against cuts, and one of the key advantages of ENGO management is their focussed remit: the value of conservation sites is less likely to be eroded than those managed by government agencies. The ownership and management of nature reserves is fundamental to the identities of, particularly, the Wildlife Trusts and RSPB, and the role of their membership in both supporting and valuing these sites is a critical safeguard. Over the decades the greatest threat to sites in the voluntary sector has been the lack of access to financial investment; the majority of conservation sites are not self-sustaining without some kind of financial intervention from grant support or agricultural subsidy.

The price of inspiration

Many wildlife sites are open to the public and are increasingly enjoyed not only by wildlife enthusiasts, but also by those who appreciate their aesthetic as well as biological value, and those seeking exercise or adventure. Many ENGOs promote public access as a service to their membership, as a means of self-promotion, and, of course, in fulfilment of their roles to educate and inspire, with a view to securing the next generation of environmentalists. Few would question the value of public access, and yet it imposes yet another pressure on some of our most important sites. The maintenance of safe, and high quality, educational public access is very costly. It also creates a burden on the site manager, who must ensure that public access is not detrimental to wildlife.

WTSWW

Skomer receives around 16,000 visitors a year

The Wildlife Trust of South and West Wales' (WTSWW) Skomer Island nature reserve, an NNR, is a perfect example of this phenomenon. Voted as the UK's favourite nature reserve in 2016, it is also internationally important for its seabirds. The island now receives over 16,000 visitors a year, and those visitors undeniably bring the risks of disturbance, accidental introduction of pests and predators, and other potentially negative influences. Our visitors are doubtless inspired: my own career owes a lot to early exposure to Skomer. However, the vast majority of income to the island has to be re-invested in ensuring that those visitors do not negatively impact the very thing they have come to see. Maintaining paths, advising visitors, patrols, and monitoring the impacts of visitors on seabirds are a huge and necessary financial burden to meet our moral duty of ensuring the access we facilitate is not damaging. We are lucky on Skomer that visitors directly provide us with an income that allows us to do this in detail, but this is not the case on all wildlife sites. Conservation sites are expected to meet an ever-increasing demand for recreational, educational and leisure activities, in some cases to a degree that exceeds the site's resilience or the owner's resources to manage it.

Lizzie Wilberforce

Sympathetic public access on sites has an important role to play in inspiration and learning

Taking responsibility

So, what does the future hold? There is little doubt that whatever replaces the Common Agricultural Policy, post-Brexit, will heavily influence our wildlife, both in the funding of our protected sites and in the resilience of the wider countryside. In the short to medium term, it appears that the ENGOs will become the primary custodians of and advocates for the value of sites important for wildlife, supported by the many sympathetic private landowners working quietly for what they believe is right.

There seems little doubt that tough financial conditions will continue for some years. There are already signs that national and local government will be looking to shed protected sites towards the voluntary sector as they seek to reduce their liabilities. Should ENGOs take on a site that is languishing in the public sector, when (and if) capacity allows? I would argue that, to have any hope of winning the fight for the environment in the long term, government and its agencies have to be active stakeholders, with the heightened understanding which comes from in-house expertise and practical management experience.

As a community, we need to stand ready for this fight. Every individual and organisation needs to be asking government to increase investment in the environment, and protected sites are just the start. All our remaining high wildlife value sites need support. Many are fragile, particularly our grasslands, heathlands and wetlands, and they are vulnerable over remarkably short timescales. To prevent damage by neglect, as well as from intensification and the disruption of natural processes, intervention is essential.

If we aren't prepared to stand up for such sites, and to force government to meet their needs, what hope do we have for standing up for wildlife in the wider landscape of competing outcomes? We must not be the generation that allowed political expediency to lower our aspirations and accept compromise as an inevitability. If protected sites are not our line in the sand, we have none, and we will lose. That is not an option we should tolerate.

Lizzie Wilberforce *works as Conservation Manager for The Wildlife Trust of South and West Wales. She has been involved in the management of the Trust's nature reserves in west Wales for the last 14 years.*

References

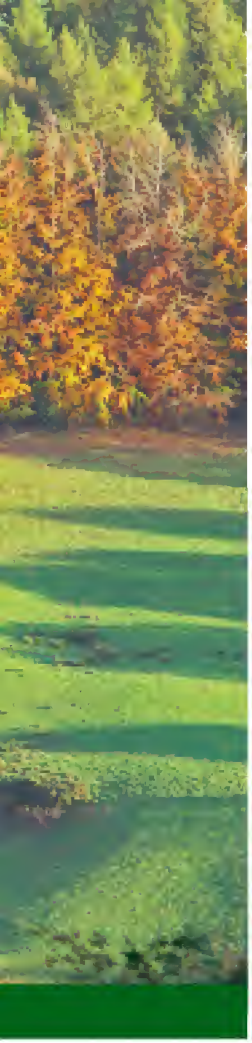
1. *The State of Nature 2016: Wales* report is a collaboration of more than 50 conservation and research organisations and can be downloaded from numerous websites.

Integrating farming and forestry - more than a pipe dream?

PLATE 1: Scrub developing on lightly grazed land adjacent to improved grassland.

Woodland and farmland inhabit policy silos which inhibit creative, sustainable practices such as agro-forestry. JOHN GOOD considers what progress has been made in breaking down barriers which are unhelpful to owners, the public and nature.

Sixteen years ago, just as the 2001 Foot and Mouth Disease (FMD) outbreak shook Welsh livestock farming to its foundations, I wrote an article for *Natur Cymru* (No. 3, pp 38-41) entitled *Forests and farms – breaking down the barriers*, in which I bemoaned the continuing failure to integrate farming and forestry and thus get the most out of our limited land resource for the benefit of farmers, foresters, the general public, and wildlife. I tried to show that the centuries-long continuing lack of integration, starting with the dissolution of the monasteries by Henry VIII between 1536-9, was not an unavoidable consequence of our history and that we could do much better. I set out reasons for my optimism that the situation could be improved, including: Common Agricultural Policy (CAP) reform proposals to replace farm livestock headage payments with area-based payments; the then new Tir Gofal agri-environment scheme which favoured integrated farming and wildlife habitat management; various programmes and grants available for predominantly native tree species planting on farmland; low returns from conventional softwood timber production as a result of (mainly) Baltic



imports following the collapse of the former Soviet Union favouring less intensive forest management; increasing optimism that silvi-pastoral agroforestry could become a significant growth area in Wales.

At the same time I highlighted continuing problems which were likely to hinder integration, including: continued high (although perhaps lower) sheep numbers in the uplands, precluding establishment of trees without the need for total livestock exclusion; forestry schemes such as the Woodland Improvement Grant Scheme and various Forestry Commission Challenge fund schemes, which generally prescribed high planting densities similar to those in commercial plantations which are not conducive to silvi-pastoral systems; low current and predicted prices for forest products, especially hardwood timber, dissuading otherwise sympathetic farmers from woodland planting and management of existing tree resources.

So how have things changed in the intervening decade and a half? The short answer seems to me to be, not much. The same separation of farming and forestry operations, with the forestry element often restricted to grant-aided tree planting with little or no effective tree management, persists on land which is crying out for well informed, integrated management. Tir Gofal and its successor scheme Glastir, while promoting woodland creation and management on farms, has not sufficiently emphasized the need for information and training for farmers and other landowners on how to get the most out of integrated systems. How many are aware of the extent of the contribution which well managed farm trees and woods can make through: sustained timber and fuelwood for use on the farm and perhaps for sale; livestock shelter; soil improvement and associated hydrological benefits,

Foot and Mouth Disease warning notice near Bridgend in 2001

including decreased storm runoff with reduced loss of topsoil and better retention of expensive fertilizers; wildlife conservation?

Sheep numbers

As far as sheep numbers and grazing pressures are concerned, the immediate result of the 2001 FMD outbreak was a reduction in sheep numbers in Wales from almost 12 million in 2000 to 10 million in 2002. There has been a continuing steady decline (to 8 million head in 2009), largely due to long running unprofitability and the de-coupling of subsidies (headage payments). Following this, there has been an increase to 9.6 million in 2015, largely as a result of an increased breeding stock due to higher lambing percentages and improved survival rates, but also buoyed by better prices for sheep meat. The overall decline in numbers has been especially marked on predominantly upland farms with restricted access to improved grazing, and this has led to the development of scrub woodland which can be observed from the roadside in many places when driving around Wales (Plate 1). These will eventually progress to woodland if the reduced grazing levels continue, as they are likely to do, given the declining appeal of farming such remote and difficult areas without enhanced grant support. This should not be regarded, as many do, as a negative effect of declining subsidies, but as a positive move towards achieving more natural upland ecosystems in which native woodland has a greater role than has been possible in recent times with persistent overgrazing. Along with moorland areas, woodland

Les Starling

PLATE 2. Large new woodland area planted under the Glastir Woodland Creation scheme.

provides an attractive habitat mix that suits a wide range of flora and fauna, many species of which have undergone serious and continuing declines in recent times.

It would be best if controlled, low-intensity grazing of some of these areas which are beginning to develop into scrub woodland could be achieved through targeted payments, so that open areas would remain within the developing woodland – open woodland generally supports a greater diversity of plants and animals than does uniformly dense woodland. This seems to be the only situation in which silvi-pastoral agroforestry is likely to become a significant rather than experimental form of land use in Wales. It was very difficult to find photographs of examples of agroforestry on Welsh farms for this article, other than in experimental trials. Hence Plate 2 shows a very impressive but stock-free tree planting exercise, funded by Glastir Woodland Creation on land owned by the charity Will Woodlands, at Cyffin near Lake Vyrnwy. This involved the establishment of 388 acres of mostly native broadleaves on a grassland site, with the chief emphasis being on landscape enhancement and wildlife conservation. The close-spaced trees are protected against rodents with individual spiral tree guards, and wild flowers are encouraged in the substantial open grassed areas by annual mowing. Livestock are totally excluded from the site, including the open grassland areas. Plate 3 shows a more typical situation, on a small strip of land where trees, and in this case beehives, are protected from grazing animals by a stock-proof fence.

A positive aspect of the UK's impending exit from the European Union is that in replacing CAP schemes with our own alternatives there is an exciting opportunity to develop more integrated thinking about the ways we want our Welsh countryside to be in future. We can potentially promote integrated land use which will enhance all aspects of the rural economy and the countryside in general, including the need to optimize wildlife conservation. But time is short, and we need to start now to involve all stakeholders in the detailed and well informed discussions that should take place to inform and guide those who will develop and formulate such policies.

***Dr John Good**, now retired, was formerly Director of the Centre for Ecology and Hydrology, Bangor.*

Les Starling

PLATE 3. Fenced area with trees and beehives.

Natur Cymru *a'r* Naturiaethwr

Os ydych chi'n caru byd natur a'r iaith Gymraeg mae'n debyg eich bod eisoes yn ymwybodol o'r Naturiaethwr. Mae'r golygydd* DAFYDD LEWIS *yn gwahodd darllenwyr i ddod yn fwy cyfarwydd â'r cylchgrawn.

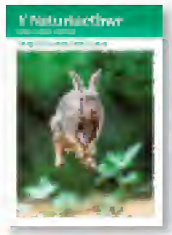
Pan gyhoeddwyd rhifyn cyntaf *Natur Cymru* yn haf 2001, llenwodd fwlch o bedair blynedd ar ddeg a adawyd gan ei ragflaenydd, y cylchgrawn *Nature in Wales*, a ymddangosodd rhwng 1955 a 1987. Yn ystod y pedair blynedd ar ddeg olynol darparodd *Natur Cymru* wledd o erthyglau naturiaethol ar gyfer ei ddarllenwyr, p'un ai'n Gymraeg neu'n Saesneg eu hiaith, mewn cylchgrawn ag iddo ddiwyg atyniadol. Bydd llawer, yn cynnwys awdur y darn hwn, yn colli iddo gyrraedd drwy'r drws bob tri mis, a bydd llenyddiaethau Cymru'n dlotach o'r herwydd.

Wedi cyhoeddi'r rhifyn diwethaf hwn o *Natur Cymru*, cyfyd bwlch unwaith eto – mae'r angen am rywle i naturiaethwyr a gwyddonwyr gyhoeddi erthyglau am Gymru, yng Nghymru, yn parhau, yn enwedig o ystyried y cyfnod heriol presennol yn ein hanes pan mae newidiadau mawr yn effeithio ar fyd natur, a chynifer o rywogaethau'n diflannu o'r byd. I'r perwyl hwn, hoffwn fel golygydd *Y Naturiaethwr*, sef cylchgrawn Cymraeg ei iaith a gyhoeddir gan Gymdeithas Edward Llwyd, estyn gwahoddiad i gyfranwyr – a darllenwyr – *Natur Cymru* gynnig eu herthyglau i'w cyhoeddi yn *Y Naturiaethwr*.

Cyhoeddwyd rhifyn cyntaf *Y Naturiaethwr* ym mis Ionawr 1979, chwe mis ar ôl sefydlu Cymdeithas Edward Llwyd, ac ymddangosodd y cylchgrawn yn rheolaidd byth ers hynny. Cyhoeddir ef ddwywaith y flwyddyn ar hyn o bryd, ac nid yw'r cynnwys yn annhebyg i gynnwys *Natur Cymru*. Mae'n dilyn meysydd diddordeb a gweledigaeth y gŵr yr enwyd y Gymdeithas ar ei ôl, sef Edward Lhuyd FRS, 1660-1709, y naturiaethwr, yr ieithydd a'r hynafiaethydd enwog o Gymro, a dreuliodd y rhan fwyaf o'i yrfa yn amgueddfa Ashmole yn Rhydychen. Mae'r *Naturiaethwr* yn cael ei ddosbarthu'n rhad ac am ddim i ysgolion a phrifysgolion, ac wrth gwrs i holl aelodau Cymdeithas Edward Llwyd.

Yn ogystal ag erthyglau sylweddol ar fyd natur, mae'r *Naturiaethwr* yn cynnwys detholiad o gynnwys cylchgrawn arall Cymdeithas Edward Llwyd, sef *Llên Natur*. Mae hwn yn ymddangos yn fisol ar-lein ac mae wedi'i seilio ar wefan *Llên Natur*, sy'n cynnwys cofnodion natur – dros gan mil ohonynt! – ynghyd ag Oriel o luniau sydd yn agored i gyfraniadau gan wirfoddolwyr ac aelodau'r cyhoedd, a daw'r rhain yn y Gymraeg, y Saesneg a'r Ffrangeg. Rhoddid yr enw 'Y Tywyddiadur' ar y gronfa ddata y mae'r holl gofnodion a'r lluniau yn eu cynrychioli. Dyma 'wyddoniaeth dinasyddion' yn cael ei harneisio i greu adnodd gwerthfawr.

Mae dylanwad cylchgronau o safon Natur Cymru yn goresgyn amser, a gobeithiaf y bydd yn bosib cael y rhifynnau yn ddigidol maes o law. Er iddi ddod i'r terfyn i'r cylchgrawn, mi fydd gwerth ei gyfraniad yn parhau i'r dyfodol. Diolch amdano.



***Dafydd Lewis** yw Golygydd* Y Naturiaethwr.
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Cyfeiriadau

1. www.cymdeithasedwardllwyd.org.uk
2. Gwefan Llên Natur: www.llennatur.com

Natur Cymru and *Y Naturiaethwr*

Over the last 16 years *Natur Cymru – Nature of Wales* has made a valuable contribution to the study of natural history in Wales. Contributors and readers of the journal are now invited to contribute articles to *Y Naturiaethwr*, the journal of Cymdeithas Edward Llwyd and the Welsh language equivalent of *Natur Cymru*, so that the momentum created can be maintained. In addition to substantive articles, *Y Naturiaethwr* also contains selected material from the monthly online newsletter *Llên Natur*, which involves citizen science input into a database that allows a substantial body of current and historical observations to be made available for analysis.

All photos: Matt Sutton

Notes on wildness

In contrast to the image of a relentless intensification of land use banishing wildlife, there are places where the wild has reasserted itself, and where the farming is gentle. ***MATT SUTTON*** *– professional conservationist, turned farmer and consultant ecologist – looks back at some Pembrokeshire projects which have featured in previous issues of* Natur Cymru *and concludes that the wild can return, given a nudge in the right direction. Then all we have to do is watch and wait.*

An abandoned limestone quarry near West Williamston, returning to the wild without the help of a restoration plan

Some years ago now, when I worked for the Countryside Council for Wales (CCW) Pembrokeshire team, I was at one of the notorious 'staff seminars', receiving a lecture about risk from the Chief Executive's 'life coach'. "We should all be bolder and take more risk," the message went. In the break, he approached me about the habitat creation which I'd done at Clegyr Boia to give his St David's Eco-city concept something tangible to celebrate. He didn't think it should form part of his project, as it was "too risky".....

It's fair to say that the heathland creation here stirred up some issues. As this involved a mere acre of ex-potato land, and was simply a reprise of what had been done earlier that year to a much larger area at Marloes, I hadn't anticipated the fuss it would cause. But here the landowner was a Dutch artist, not a pillar of the local farming community as had been the case at Marloes. I vividly recall being summoned to a meeting in a neighbouring farmer's barn. In front of a baying crowd and a local reporter, the host gave a tub-thumping introductory speech. "All

over the country, farmers are doing great things for conservation. They're planting trees, digging ponds and leaving stubbles. But that's fine, because it's all reversible". Another passionate farmer said that "his father, and his father's father, had toiled that field under the midday sun to provide food for hungry bellies. You've come in here with your JCB, and undone all that in an hour". Later that afternoon, he'd tell me how he'd enjoyed seeing a thousand starlings descend on that field the day before, and we talked about how farmers had been dumping spuds over the cliffs because of an oversupply on the market. I accepted that this new style of conservation would raise eyebrows amongst farmers brought up on the ESA scheme, which often appeared to provide little return for its money. And I saw for perhaps the first time that the loss of productive land to conservation could invoke similar feelings to those that arise in conservationists watching an old meadow or heath going under the plough.

Naturally colonising lime rubble on one roof, with a more conventional turf roof in the background

Paperwork or groundwork?

Flowcharts were drawn up by heathland groups. Apparently, the field was too small to be worth undertaking such work on (its connection to the adjoining wet heath seemingly not relevant). Recent years have seen small fortunes spent on GIS maps, which show how the countryside should look. All the possible connections coloured in, and the most desirable land parcels turned into different colours signifying new habitats. How much new habitat has actually been created as a direct result of those mapping exercises I wonder? "Excuse me sir, your postcode has been selected for heathland creation....." Surely intuition and opportunism are better tools than connectivity maps in real life?

I was lucky enough to start out as a conservation officer with a skilled and trusting boss who knew how to create space around me and tolerate a degree of risk. I recall as well how I found the time to do work on the ground, by letting spurious paperwork fall off the desk. There was a letter I was supposed to write to all the Special Areas of Conservation (SAC) contacts – the farmers, commoners, utility companies – to tell them that, following a vegetation survey of these St David's commons, we'd decided that the wet heath was dry heath, although actually it was humid heath which is somewhere between the two. My protests to the legal people fell on deaf ears. "Make sure we get a copy too" they said. Well, they got theirs.

Now I'm up at the Clegyr Boia heathland on a calm winter day. The Neolithic site above has a timeless frame of heather and gorse; the SAC wetland below has one less source of runoff to turn the bogbean pools into evergreen grass swamp. All we did was scrape some soil into a bank across the field, then spread some heather cuttings around. Hardly reintroducing wolves.

The zoologist re-wilders have their work cut out for sure. We're not going to see lynx in Pembrokeshire any time soon but, as I slow down, I learn to appreciate the wild on a smaller scale. My roofs are an exercise in rewilding – particularly the one capped with a layer of old lime mortar sifted from

the wall of the house that used to be here. In two years, I've recorded over fifty moss arrivals – you don't get that with a roll-out mat of invasive Sedums. Last week, I poked around in the old limestone quarries of south Pembrokeshire, discovering rare plants, bryophytes, fungi and even a slime-mould new to Wales. No-one came up with a restoration plan for these quarries, they just stopped work and locked the gates. They're more wild and interesting than a human-designed, re-graded and sown version could ever be. And the risks of exploring them in their un-sanitised state perhaps adds to the thrills of discovery.

I spent a day on Gower back at the end of summer. After delivering yellow-rattle seed to ex-colleague Alan Evans, now National Trust (NT) Countryside Manager, he suggested I look at Cwm Ivy Marsh before going home. Natural Resources Wales had a big-budget plan for here – bulldozers to refashion the whole 40ha into a billiard table of Salicornia. Maximising the extent of SAC-feature saltmarsh would fulfil the obligation to replace that being lost to coastal squeeze elsewhere. But before the plan could be implemented, the seawall breached one day, and NT just left it at that. Why use machinery when you have time and tide on your side? The network of creeks, ridges and islets being naturally salted to varying degrees may not all conform to a saltmarsh NVC community, but it certainly appears the more varied and interesting for it. Over two-thirds of the saltmarsh plants on the neighbouring SAC are already in, as is the rare whorl snail *Vertigo angustior*, which presumably appreciates the edge-effect that the micro-topography creates.

Heathland creation successes

Two of my more interesting recent consultancy contracts were to review the main heathland creation schemes in Pembrokeshire – my efforts with CCW on National Trust land at Marloes, and those of the Pembrokeshire Coast National Park Authority at Penlan. The control plots in the new Marloes heaths are still grassed-over with couch more than a decade

Beehives at Trehill farm for the heather season

Re-created heathland and scrub at Penlan, with the Gwaun valley behind

later, whilst the active intervention of soil-scraping and sulphur has resulted in a heathland that the National Trust themselves have declared a success. Uncommon plants such as allseed *Radiola linoides*, lesser centuary *Centaurium pulchellum* and prostrate broom *Cytisus scoparius* have found their way in, whilst wheatears have colonised and skylark numbers have soared. Much recording of less well-studied wildlife such as solitary bees and lichens remains to be done. For the Smithies as tenants, the reliability of conservation payments has helped to counter-balance the volatility of cereal and potato prices. I still work with them as we harvest honey, meadow seed and plug plants for green roofing contracts (such as a building for the RNLI at St Justinians) where the client requires a compromise between natural regeneration and blanket Sedum cover. These activities complement the cattle grazing, and demonstrate that gentle-farming can happily take place on land which has been helped to return to wilder state. Ideally, the small-scale disturbance that our plug-digging creates should be more extensive, with the Marloes heaths being used to supply turves or brash to other coastal heathland re-creation schemes in the county. This would help to maintain youthful, dynamic heaths, receptive to chance colonisation events and species range expansions.

Different issues surround the National Park project at Penlan, above the Gwaun valley. After the conifers were cleared, the land was willing and ready to follow with heathland plants, and much of the ground preparation and seeding work proved unnecessary. Fifteen years on, much of the hillside is fast maturing heather and gorse, providing a counterpoint to the more heavily grazed and burnt Carn Ingli heaths which adjoin it. As the heath closes over, questions arise as to whether renewed attempts should be made to persuade local cattle farmers to graze the coarse, unproductive vegetation, or whether successional processes should be given free rein. Tree growth across the site would, in time, complement the adjoining Gwaun Valley woodlands. This may prove less politically attractive than the former option, but would require less resource input. Maybe deer will find the land, as they have recently found my own woods, and thin out the developing forest. Beekeeping, foraging, bushcraft and biomass are possible enterprises that would keep re-wilded humans in this picture.

Our own model for simple, niche or quality harvests (described in *Natur Cymru*, 47) may not suit everyone or every location, but we have worked with an increasing number of landowners in west Wales for whom maximising farming income is not the priority. At a time when the Welsh Government is hacking away at Basic Farm Payments where landowners have tolerated scrub or tree growth, this is a fortunate thing. Even a pond – if left unplanted and allowed to do its own thing – could be seen as small-scale re-wilding. With or without beavers.

There are times, then, when some initial intervention is needed, rather than a fall-back to a 100 year vision. But as both Cwm Ivy and my roof show, the wild is all around us, lying in wait. We only need to do so much, then sit back and watch.

Matt Sutton *spent 15 years with CCW. With his partner Vicky Swann, he runs a farm business and ecological consultancy, specialising in vegetation survey and habitat restoration. They can be contacted via wyndrushwild.co.uk, which also features a full write-up of the Marloes Coast Project amongst other case-studies.*

Storms at sea - monitoring effects and cycles

Large quantities of seabed animals sometimes wash ashore in Welsh bays. ***IVOR REES*** *considers why the benthos of Red Wharf Bay is particularly prone to such seemingly catastrophic events and what this means for monitoring the possible effects of major infrastructure developments*

All photos: Ivor Rees

Mass stranding of subtidal fauna after a storm

Masses of seabed animals are occasionally found washed ashore on beaches all round Wales, usually but not exclusively after storms. Most belong to species that live in soft sediments just offshore, at depths between low water springs and about 15m, and so give some clues as to what was living there. A spectacular example of such a stranding occurred in Red Wharf Bay, Anglesey, after a northerly gale on 21st November 2016. This event was notable for the huge quantities of large otter shells *Lutraria lutraria* that were still just alive a few days later with their siphons fully extended. They were accompanied by masses of a type of razor clam, *Pharus legume*, and thousands of empty tests of the heart urchin *Echinocardium cordatum*. Mixed in with all this were many of the other benthic organisms which are often frequent or abundant in the muddy sand sediment just offshore in the bay. These included the brittle stars *Ophiura ophiura* and *Amphiura brachiata*, the sea mouse *Aphrodita aculeate*, and a type of sea slug *Philine aperta*.

At this point in the story some explanation is needed about the local topography and special ecological features. Red Wharf Bay faces NNE, so it is sheltered by Anglesey from prevailing westerly winds and open sea swells but is exposed to infrequent northerly gales. Although the tide range is large, the alignment of the coast means that there is an area with reduced tidal currents. This results in a lozenge-

Decaying extreme Phaeocystis bloom

Large otter shell *Lutratria lutraria* Trumpet worm *Lagis koreni*

shaped patch, only a couple of kilometres long by half a kilometre wide, where there is selective deposition of fine suspended sediment. Continual cycles of suspension and re-deposition lead to gradients with disproportionate amounts of organic 'marine snow' (falling organic detritus) settling out to enrich the benthos in relatively small areas. Owing to the amount of organic matter the cohesive muddy sand in such places is often black and anoxic below a superficial layer of loose material.

The thickness of the surface layer is much influenced by burrowing animals. At times the high abundance (more than 2,000 per square metre) and continual turnover of sediment by trumpet worms *Lagis koreni* is enough to prevent the recruitment other species. These worms are short lived, as is a small bivalve *Abra alba* which may replace them in the same situations. At other times a more mixed fauna has been found with a selection of longer lived species, suggesting periods of relative stability. A few times the same area has even been dominated by enough sand mason worms *Lanice conchilega* to temporarily stabilise reef-like microtopography. After intense phytoplankton blooms the decaying organic matter causes sufficiently low oxygen levels for normally buried animals to come out onto the surface where they are liable to be washed away. For example, brittle stars respond by standing clear of the bottom on the tips of their arms.

Box corer

While the rocky subtidal may be more charismatic, the local enriched, inshore muddy patches are worthy of attention in other ways, not least because of their role as productive nursery grounds for fish. Compared to other places, the nature of the seabed habitat in Red Wharf Bay is relatively well known. For over 25 years grab samples were taken as part of practical days at sea for marine biology students at Bangor University. Unfortunately this did not happen in the months immediately before the November 2016 stranding, but earlier records do show the inherent variability in the inshore muddy sand patches. Among the lessons to be learnt are the potentials for collaboration between the Welsh universities and those concerned with monitoring. Monitoring at the intervals needed just for conservation status reporting cycles will be inadequate to show the scale of ecological variability. These places also provide useful clues as to the likely effects of settling fine organic sediment in the projected tidal power lagoons.

***Ivor Rees** is a naturalist and former University marine scientist.*

A step change for nature

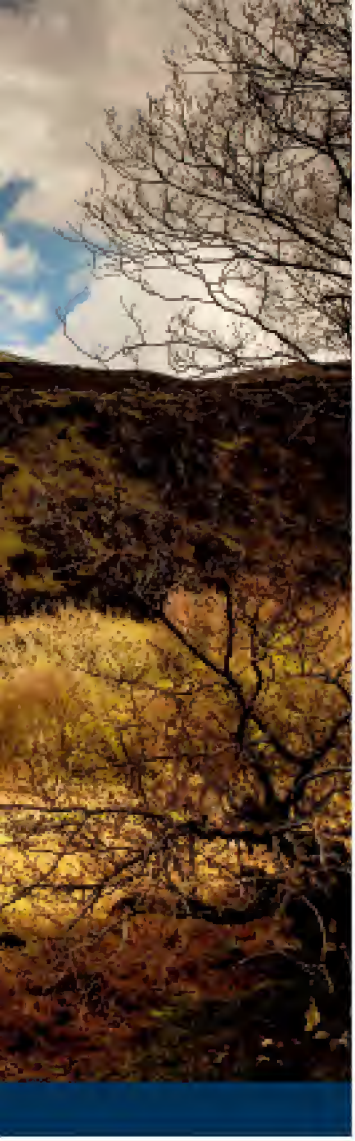
Mike Alexander

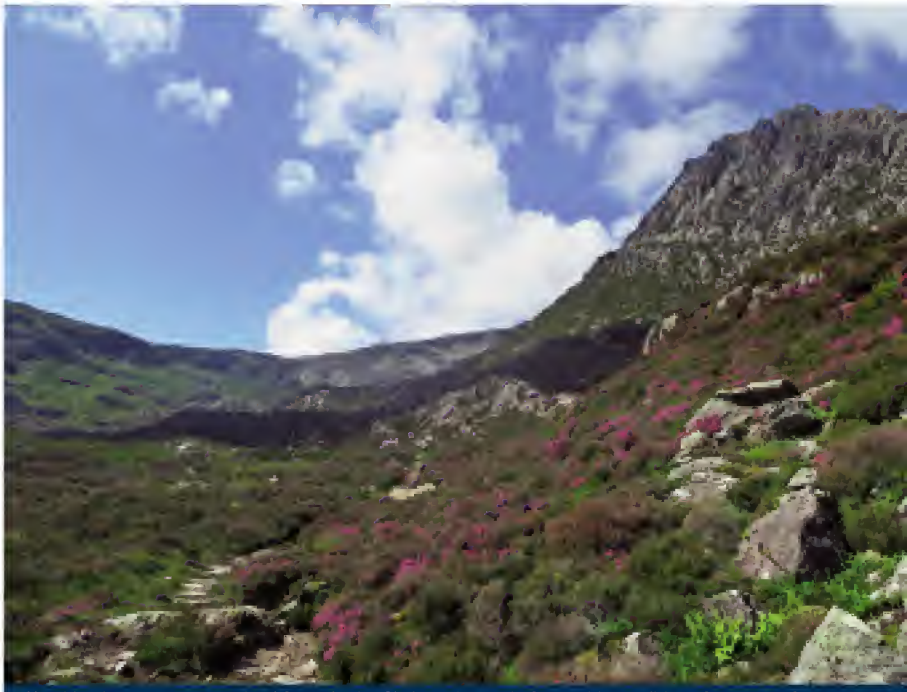
Beautiful mosaic of new birch, rowan and oak woodland expanding into good quality wood pasture at Llyndy Isaf and heath

MIKE HOWE, Land Management Planner for National Trust Wales, reports on an ambitious strategy to make a step change for nature on the Trust's land in Wales.

On joining the National Trust (NT) in 2012 the new Director General Helen Ghosh asked the question "What does the nation need from us in the 21st century?" One of the answers was to re-focus our attention on our land (as opposed to gardens, building and collections – which remain important of course). How far was our land meeting six functions we had set for it – providing healthy soils and water, a beautiful natural environment, rich in wildlife and culture, enjoyed and productive? To answer this, in 2015 our staff completed a land condition assessment.

The National Trust is a major landowner in Wales and much of the 46,000 ha of land that we own is covered in semi-natural habitats and is potentially of high nature conservation value. Our land ownership includes the extensive remote upland areas of Snowdonia, the Brecon Beacons and Abergwesyn Common in mid Wales, as well as significant





Heathland on our tenant upland farms in the Glyderau is now in favourable condition after years of reduced sheep stocking rates and summer-only grazing

stretches of the West Wales coast from Gower, via Pembrokeshire, Ceredigion and Llŷn, to Anglesey.

The results of the land condition assessment were not good, and surprised a lot of people. It showed us that on 50% of our land habitats are not in good condition and that wildlife performed the worst of all of the six functions. Only 11% of the designated habitats are considered to be in favourable condition, with 55% unfavourable-recovering. This perhaps is unsurprising given that 97% of our land is classed as 'farmland' which has been subject to the same socio-economic and environmental factors that all of our countryside has faced since 1945, with similar declines in wildlife populations and habitat loss.

These results required a change of emphasis. A new strategy, *Land and Outdoors: Delivering for Nature* was born, and new processes focussed on how to make a step change for nature and turn this situation around.

The 'Lawton Report'[1] concluded that we need better, bigger, more, and more joined-up habitats if we are to make a step change for nature and, using this report as a lens, the National Trust in Wales has evaluated how we are doing now, and how and where we need to re-focus our effort and resources.

This process is being woven into the fabric of what the NT does and will do for the next 10 years, and we have ambitious delivery targets that all regions must adopt and build into their business and management planning processes.

Now at this point you may be thinking 'not another strategy'. Is this a new strategy with a plethora of management plans that don't really guide management or lead to real outcomes on the ground? I've been around long enough to see plenty of these, but this one feels very different to me and, perhaps more importantly, even at this early stage I

Mike Howe

When sheep grazing is removed on some mountain sites new young woodland emerges amongst luxuriant heather growth. This is now happening on some NT properties in the uplands (Bryn Rhug on Cadair Idris, left). Where appropriate, grazing (ideally with cattle) can be

am already seeing really exciting changes that are directly improving conditions for wildlife on the ground, and much more is afoot.

So where do we think we need to see the biggest changes and, if we want our habitats to be in good condition, what does 'good' actually look like? Well the answer to that depends on where you are.

Our worst habitats – and biggest challenge – are the uplands (upland heath, blanket bog and non-designated acid grasslands) with low species diversity, eroding peat, and water management issues. There are large tracts of degraded upland dominated by very species-poor vegetation with little value for wildlife, including more than 5,000 hectares of upland SACs dominated by acid grassland.

The poor condition of these habitats is largely due to centuries of overgrazing, with species-poor grassland replacing the largely absent natural transitions from scrub to woodland to heath. Most of our upland estate is also common land. This severely restricts our ability to manage the land and make the changes needed for the habitats to improve.

The good news is that stocking rates on some of our farms have decreased, giving rise to a dramatic improvement in the quality of the blanket bog and heath and, in some places where grazing has all but ceased, young woodland is expanding high up on the slopes. Where light grazing is now maintaining good quality heath and blanket bog, trees are still unable to regenerate in any significant numbers, so instead we're planting thousands of trees up stream and

Mike Alexander

reintroduced once the land has had time to recover. We need to ask ourselves, why does land like this need to be used for sheep production when it can produce high quality habitats and water management?

river corridors. These will be the seed sources of the future ... one step at a time...

The simple fact is, for reasons of ecosystem health and water catchment management, we need more trees in our uplands. The UK has by far the smallest ratio of trees/woodland to grazing land in its uplands of any other country in mainland Europe. This is largely due to a very long history of sheep farming. There is a perceived conflict between the cultural tradition of sheep farming and the extent of woodland and heathland in favourable condition in Wales. There doesn't need to be a conflict, and we have to demonstrate how and why this is the case. NT's biggest in-hand farm at Hafod y Llan, on the south side of Snowdon, is attempting to do just that, and some of our tenant farmers in the Glyderau and Carneddau are too.

Some may remember that six years ago the NT was successful in acquiring the farm at Llyndy Isaf in Nantgwynant. Successive young scholarship farmers since then have helped to implement our plan to maintain a sustainable working hill farm that produces high quality food and wonderful upland habitats that include naturally expanding woodland. The development of the habitats has been spectacular and serves as an example of what can be done.

In many ways the lowlands present an even bigger challenge. If there is to be a step change for nature here, then our agriculturally improved, productive grasslands need to be managed differently and need to be more species-rich. In our NT parklands this

revolution in grassland management has already begun. New schemes to work with our tenants to restore large areas of hay meadows are under way, and some land has been taken back in hand to ensure that it meets the high nature standards that we have set ourselves by 2025. And in amongst this parkland grassland we have some of the largest concentrations of ancient trees in Wales. These have become rich habitats in their own right, supporting a vast range of dead wood invertebrates, fungi, lichens, liverworts and mosses. These precious ancient trees are all being managed to ensure their long term viability, and replacements have been planted to perpetuate the parks for centuries to come.

There are so many good things happening on NT land all over Wales, and not just thanks to NT staff. Our tenants and our partners are doing great things too. Only time will tell how successful we are in turning around the fortunes of wildlife, but it won't be for a lack of trying or a real commitment and effort from everyone involved.

__Mike Howe__ has worked in conservation in Wales for 25 years, first as an ecologist and the Head of Conservation for the Pembrokeshire Coast National Park Authority, and now as a land management planner for the National Trust.

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Mike Alexander

Top: parkland grassland on our Erddig Estate, typical of species-poor, agriculturally improved grassland. A new scheme is being implemented here to encourage the tenants to produce flowers and pollinators, as seen in the wonderful Coronation Meadow at NT Plas Newydd (bottom) ... this is what good looks like ...

Green **Bookshelf**

Wild Orchids of Wales – how, when and where to find them
Sue Parker
First Nature 2016
£19.95
Hardback 192 pages

This is a superb book. I like the illustrations, attention to detail, practical guidance, links to the current conservation scene and, of course, the orchids! Sue Parker is an accomplished author on the wild plants of Wales, with a particular focus on its nature reserves and showing her readers where and how to find the special plants.

The book starts with a summary of the landscapes and orchid habitats of Wales and the organisations and activities that are promoting the conservation of orchids in the wild. There is a challenge too, in that much more needs to be done to secure the future of these plants and the habitats and special places where they occur.

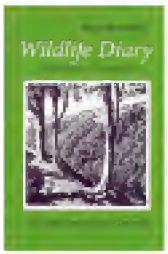
The bulk of the book provides a comprehensive guide to the orchid species which occur in Wales. For each species there are sections on distinguishing features, geographical distribution, typical habitats and flowering time, together with clear and beautiful photographs. This provides an authoritative account which builds on botanical field guides and will enable the reader both to identify species and to learn about their ecological requirements.

The next section of the book sets out where orchids can be found in Wales and includes information on walks through, for example, the Anglesey Fens, to see the main orchid habitats and localities. The accounts are grouped at a north, south-west and east Wales regional level and then by county. In doing this, the book provides a showcase for the Welsh National Nature Reserves, and Wildlife Trust, Plantlife, RSPB and other nature reserves – in fact, it is a new nature reserve guide for Wales! For each site, information is given on orchid species, other special flora, directions, access, facilities and walks.

The last section of the book, on information resources and reference material, completes its comprehensive but accessible account. It covers orchid taxonomy and biology and an illustrated glossary of technical terms, but also how to succeed in photographing orchids, perhaps the best way to appreciate the beauty and complexity of these flowers.

The book is beautifully designed and a delight to read. I am sure that it will raise the profile of orchids and the places where they are found. In many ways Sue Parker is using the special appeal of wild orchids to highlight the wildlife and ecological value of key Welsh habitats and places in general. She focuses too on the special importance of our nature reserves and their importance as refugia from which, given the right management, special wildlife including orchids can spread into the wider countryside. But the strongest message of all from this book is to get out there yourself and see the wild orchids of Wales in all their natural splendour!

David Parker



Wildlife Diary: A Year in the Old Welsh County of Meirionnydd
Publisher: Wildlife Wales, 2017
Hardcover
£14.99

Brian MacDonald, who has written a diary column for *Natur Cymru* in the past, has now published a 72-page hardback book recording the wildlife of his home county through the year. It is complemented with C F Tunnicliffe's fine illustrations.

Reviews of books of interest to readers have been a feature of *Natur Cymru* since our launch in 2001. Sadly we will no longer be able to provide this service and spread the word when new books about Welsh wildlife and landscapes are published.

Seeds of hope – some plant conservation achievements and challenges

Volunteers counting greater butterfly orchids at Plantlife's Caeau Tan y Bryn reserve (Clynnog - Fawr, Gwynedd)

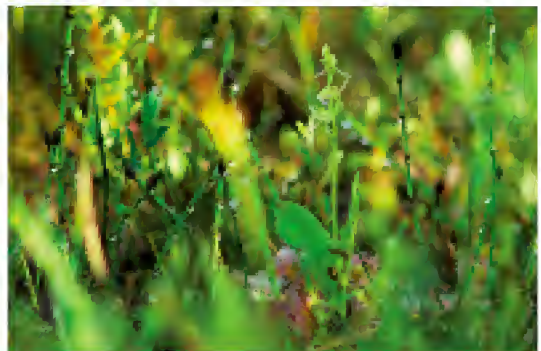
Ray Woods/Plantlife

***TREVOR DINES** reviews the state of Welsh botany and the achievements of Plantlife and others during the lifetime of Natur Cymru.*

Sixteen years ago, I was lucky enough to establish Plantlife's presence in Wales (see *Natur Cymru* 7 pp43-44). The botanical community here has come a long way since then, and this final issue of *Natur Cymru* is a good opportunity for a stock-take of where we are and what the future holds.

Conservation needs a firm foundation of knowledge, and in this we've made exceptional progress. We are the first country in the UK to publish Red Data Lists for all our flowering plants, lichens and bryophytes[1]. We're the first country in the world to have a DNA barcode database of our entire vascular plant flora. And we're the first country in the UK to produce County Rare Plant Registers for all our vice-counties. We know our flora like few others.

Our conservation work with partners is also breaking new ground. This includes projects such as large-scale dune rejuvenation at Kenfig, where fen orchid *Liparis loeselii* has responded so well (with over 500 plants in 2016, the best total for many years) that we're now taking this approach to other dune sites. At Ganllwyd we've reintroduced cattle grazing in woodland to clear dense saplings and allow in more light to benefit threatened lichens and bryophytes. On Gower we've pioneered new techniques to clear invasive non-native cotoneasters from limestone grassland, while on the Great Orme we've just purchased a flock of over 300 sheep to counter the effects of undergrazing. On farmland we've mapped,



Fen orchid *Liparis loeselii* Tegeirian y fign galchog

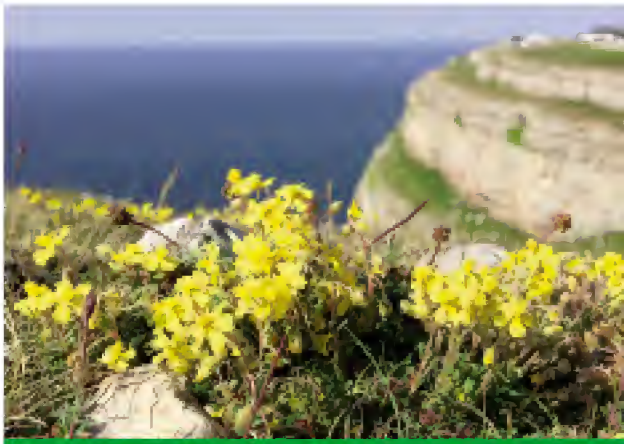
Bartosz Cuber CC-SA 3.0 Unported

on a field-by-field basis, hotspots of arable plant diversity to identify Important Arable Plant Areas and, as part of the Coronation Meadows project, we've created 19 new meadows (totalling over 155 acres) in 14 counties across Wales using natural seeding techniques. All of these, and many more, are triumphs for species and habitats.

Until very recently, there was much doom and gloom over the loss of expertise and who could become 'the next generation of field botanists'. It's true we've lost many specialists from the National Museum of Wales and the former Countryside Council for Wales, but Natural Resources Wales still retains expertise in higher and lower plants. And field botany is now thriving. We're engaging more people than ever before; the BSBI's network of volunteers, for example, is flourishing with several new active county flora groups, while Plantlife is running a lichen apprenticeship scheme and has just launched a project to train 230 people in the identification of waxcap fungi. There's definitely a groundswell of support, not just to observe but to actively participate in conservation and make a difference.

Politically, we've now also found a clear voice for wild plants. When there's a challenge, we'll counter it and make our views known, whether in the corridors of the Senedd or through publications such as *And on that farm he had...*[1] (outlining our vision for agri-environment schemes in Wales) and *Forestry Recommissioned*[1] (arguing for woodland quality rather than quantity). I'm an eternal optimist; I think you have to be, in the world of conservation. We've had a rocky road of things in the past, especially over funding and political willpower to do the best for our wildlife (sadly politicians often seem to be our worst enemies). And there are, of course, huge challenges ahead, not least the changes wrought by Brexit. There is the future of the Common Agricultural Policy, which I hope is an opportunity for genuine reform with all voices being heard, but negotiations will more likely be dominated by the powerful agri-business sector. With increasing pressures on land from agriculture and development, we will need to fight very hard to retain the same levels of legal site protection. And sources of European funding, which allow us to do some of our most exciting large-scale conservation work, are already disappearing.

Trevor Dines/Plantlife



Hoary rockrose (*Helianthemum oelandicum ssp incanum* Cor-rosyn lledlwyd) on the Great Orme

And, perhaps most of all, we need to truly recognise the role wild plants and fungi play in our lives and landscapes. For too long they have been seen as mere wallpaper – the soft-focus backdrop to all our other wildlife. In fact, they alone provide all the ecosystem services we're keen to protect and promote, from carbon capture to flood defence and from pollination to colouring our countryside. Rather than just conjuring them up from a packet of seed, we need to give them the same respect as all our other wildlife, giving them the opportunity to thrive, flourish and spread in their own way.

When I look out of my window over the fields of the Conwy valley, many are still largely devoid of wild flowers. However, I'm lucky enough to own one of those new Coronation Meadows[2] and, next spring, there'll be a wealth of flowers at my feet. If we can sow a few more seeds of hope, both in the soil and in people's minds, then I'm excited for the future.

***Trevor Dines** is Botanical Specialist at Plantlife, where he is a writer, spokesperson and champion for our wild flora.*

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1. These can all be found on the Plantlife website under Publications www.plantlife.org.uk
2. https://www.youtube.com/watch?v=4u1i5SbZTXc

Vincent Wildlife Trust

Wildlife and National identity – putting the wild into 'brand Wales'

Pine marten *Martes martes* Bele

Wildlife is an inextricable part of the Welsh identity. But do those looking in from outside Wales view wildlife as a distinctive characteristic of the nation and a reason to visit this country? NATALIE BUTTRISS ponders its untapped potential to draw in the Welsh diaspora to visit Wales.

Last September, I was privileged to be invited to the annual North American Festival of Wales (NAFOW), held in Calgary, Canada. I was representing The Vincent Wildlife Trust and talking about our Pine Marten Recovery Project. This has involved the translocation of 40 pine martens from Scotland to mid Wales as a first step in boosting marten populations in southern Britain. At the same time my friend and pine marten champion, Iolo Williams, was also presenting his experiences of wildlife. Together we were flying the flag for wildlife in Wales.

During the early days of planning with the festival organisers, I was amazed to discover that there had been little representation of wildlife in the programme in previous years. A Festival of Wales with no mention of its natural gems amongst all the culture and history that were traditionally included? How had that gone under the radar when the Visit Wales website gives lots of reasons why Wales is a brilliant place to enjoy wildlife?

Perhaps Welsh communities had a different perspective on wildlife that

made it less compelling than Eisteddfod performances, rich industrial history, and cultural icons like the harp and love-spoons?

A different perspective?

To state the obvious, wildlife in North America is BIG! There are big carnivores and herbivores roaming over big areas. In contrast, Wales has no carnivores that can compete with the likes of bears and wolves; elk and moose would dwarf our species of deer. In size, Wales is closest in equivalent square miles to the very small US state of New Jersey. Wildlife on the other side of the pond is highly 'controlled' for human purposes; management of nature reserves involves vast areas of land. As a result, there are fewer opportunities for community involvement in the way that there are in Wales. All in all, the relationship between nature and Wales, and between nature and the two North American countries, tends to be a different one. To be promoting a small carnivore, NGO and community-led conservation project at NAFOW was, therefore, going to be a somewhat different experience to that which might be experienced in the UK. The kind of comments I received from NAFOW delegates in Calgary about pine martens bore this out. To paraphrase conversations: "Yeah those critters are everywhere here and are legal tender", "Never seen one, we have much bigger animals to worry about".

Despite these differences, my audience was very positive overall about our aim to boost the pine marten population in Wales. What mattered to them, having lived in Wales in the past or having connections to family members still in Wales, was not so much how important the conservation of these animals was, but how close our operations were to places and people they knew.

A lady who corresponded with me grew up on a farm in North Wales until 1971. She wrote: "My sister and her husband live on Anglesey and I have been closely following their reports on the return of red squirrels to the Island."

So it seems that connections with those in the know and on the spot might inspire those abroad. They may not think about the wildlife until someone else they know mentions it. Another delegate I spoke to backs this up: "Initially I didn't give much thought to nature and wildlife in Wales until I was able to visit and spend time in this beautiful little country. I can say with assurance that us Welsh-Americans feel that the nature of Wales is utterly important to Welsh identity...the more you immerse yourself in the daily life...you begin to hear mention of birds and animals..."

Linking family connections to wildlife

Back to NAFOW. How could I ascertain if my audience had connected with pine martens as an intrinsic part of Wales? Could I continue to market pine martens as an iconic species that represents Welsh wildlife? The profile of Welsh wildlife, and pine martens in particular, has certainly been raised amongst those who attended NAFOW. In the interests of developing some longer-term relationships, I left Calgary with a list of names and email addresses for those who wanted to be kept informed, and offered to host field visits for those returning to Wales - families in tow naturally!

My experience from Calgary left me wondering whether there was scope to engage the global Welsh community (estimated to be over 16 million people[1]) and how much Welsh identity would influence the success or otherwise of this. In an age dominated by the internet and social media, we should be able to reach out more to those abroad and use the power of imagery to which wildlife so easily lends itself. I heard recently that Bardsey Island has more American followers on social media than UK ones, so there's a thought to explore. Often, however, promoting the image of Wales needs to be a joint effort to have meaningful impact.

One agency that has a remit to attract international visitors could be part of the solution. **Visit Wales**, tasked with shaping the 'Welsh brand', is in a good position to sell itself to the Welsh diaspora market. However, the proportion of international visitors to the UK who visit Wales is woefully low (some 2% of visits to Britain, less than 1 million visits[2]). That equates to £410 million of tourist spend a year, and 2016 has recorded the highest figures yet for overseas visitors to Wales, but it's a small piece of the pie nevertheless. Of course that spend is not all

related to wildlife experiences, but the Visit Wales website dedicates a significant area to wildlife watching. I am sure they are aware of the importance of the diaspora market, but strangely there was not one mention of the word 'diaspora' in the National Assembly of Wales Tourism report in 2014 – a potential community of interest which might identify much more closely with Wales than most other international visitors. Thankfully, there was a section in the report on developing 'Nature-based and Wildlife Tourism', and acknowledgement that this was still a relatively untapped market, primarily because people are unaware of what wildlife wonders Wales has to offer.

Brand Wild Wales?

Could Wales be made more appealing to the diaspora community by linking it with a stronger nature offer? It might be an important factor in the future success of nature conservation projects, post Brexit. If visitors, particularly international visitors, are valuing their wildlife experiences, and paying for the privilege, then some of this income could be redirected back into the conservation sector. More investment in the quality of biodiversity means better quality natural resources for residents and a healthier and more prosperous country, further increasing the attractiveness of Wales as a place to work, socialise and visit: everyone benefits.

Supporting a well-resourced, sustainable tourism offer where wildlife is a central pillar of 'Brand Wales' must surely have merit. Wild Scotland[3] is a good benchmark to measure up to, and statistics on visitors primarily motivated by wildlife experiences are impressive[4]. We are slowly edging towards this in Wales, but I suspect transformational action is needed to really make a difference. Wildlife should and could be weaved into most messages around the greatness of Wales – a vibrant place where wildlife is thriving. One of my new found friends from NAFOW described to me her husband's first trip to Wales with her. They were driving through 'the heart of wild west Wales' when suddenly he pulled up and said "I get it now; this is the most beautiful place I have ever seen in my life". How much more latent interest is out there if we could only 'naturalize' the nation's image more?

So I suggest we make more of our Welsh wildlife, and build on Welsh family connections with nature for a more sustainable future.

Acknowledgements

My thanks to Hilary Macmillan, Megan Williams, Jeanne Jindra, Dilys Rana, Lizzie Croose, and Iolo Williams for their help with this article.

Natalie Buttriss *is CEO of the Vincent Wildlife Trust.*

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"I get it now"

Lawsonstu CC0 1.0

Green **Bookshelf**

From Mallards to Martens
Hilary Macmillan
Vincent Wildlife Trust 2016
Softback 96 pages
£25.00

This lavishly illustrated book celebrates the mammal conservation work carried out by the Vincent Wildlife Trust over the past 40 years, an inspirational and extraordinary story.

The Trust was founded in 1975 by Vincent Weir who, as a schoolboy, had been inspired by a Peter Scott painting of mallards coming in to land. Born John Vincent Weir, younger son of Andrew Weir, the second Baron Inverforth, he remained almost 40 years in the family shipping firm while devoting much time and much of his substantial wealth to wildlife conservation. In financial terms he provided over £100 million to projects largely in Great Britain, but also in Ireland and elsewhere in Europe, mostly given anonymously.

Otters were Vincent Weir's first interest and he was to spend many hours from 1969 onwards in personal study. In 1975, greatly moved by the decline in numbers, he established the Vincent Wildlife Trust with the express intention to press for legal protection for the otter and to work with others to research and reverse the causes of the otter's decline. Two years later the national otter survey commenced; the results, and several reintroduction programmes, paved the way for the recovery to the former range we see today.

The decline of the water vole was first noticed in the 1970s but there was no funding for a national survey until Vincent Weir was contacted by phone. "Give me five minutes and I'll come back to you." Five minutes later his reply was "Yes, the Vincent Wildlife Trust would take on the survey." This and subsequent surveys have shown the continuing decline in water voles, now extinct in some areas, while in others with habitat management schemes and reintroductions there has been success to report.

Regarding bats the Trust has focused its efforts on three species: Bechstein's, greater and lesser horseshoe bats. In Wales, roost sites such as Pencelli Mill (Brecon), Penallt Old Church (Monmouthshire) and Hendre Cottage (Denbighshire) have been afforded protection; at Hendre, 30 lesser horseshoe bats have increased ten-fold.

By the early 20th century the polecat had largely vanished from England and Scotland and only clung on in parts of Wales. The Vincent Wildlife Trust undertook periodic surveys from the mid-1990s to track the increase in numbers and extension of range to parts of Britain from where it had been absent for over a century.

Following survey work since 1983, the Trust launched the Pine Marten recovery project in 2014 with the aim of restoring a healthy, viable pine marten population to England and Wales. This is partly being undertaken by the translocation of pine martens from Scotland where they are doing well.

Vincent Weir retired as Chairman of the Trust in 2007 because of increasing ill health, and died aged 79 in 2014. An obituary noted he was "a visionary man with resources, and few people have done more to conserve British wildlife than this remarkable individual – a man who quietly got on with it, using his own funds and networks, and who never asked for thanks or courted publicity". *From Mallards to Martens* is a fine record of what has been achieved and what can be achieved. Oh that there were more Vincent Weirs interested in our wildlife!

David Saunders

Note: From Mallards to Martens *is available at a special price of £25 (incl. p& p) by cheque addressed to 'The Vincent Wildlife Trust' at 3 &4 Bronsil Courtyard, Eastnor, Ledbury, Herefordshire HR8 1EP. If you mention* Natur Cymru *in your order, the price is £22.50.*

Conserving little creatures - invertebrate dilemmas

DEBORAH SAZER
considers how well conservation is working for invertebrates.

Steven Falk

The ivy bee *Colletes hederae* has continued its spread across much of Wales and southern/central England since first recorded in 2001, reaching as far north as Morecambe Bay and the Middlesborough area in 2016.

Wales Biodiversity Partnership estimates that we have "more than 20,000 different species of macro-invertebrates and ... more spiders in a three-hectare field than there are sheep in Wales." It is impossible to speculate on the fortunes of all. Our attention is generally drawn to the charismatic butterflies, moths, dragonflies and bees, with other groups of terrestrial, freshwater and marine invertebrates much less understood or catered for. Clearly there have been dramatic declines. Our 'wildlife baseline' usually lies in our own childhood memories, and many of us are old enough to recall the summertime 'moth snowstorm'[1], when car windscreens were plastered with insect carcasses. Now we can travel for miles with barely a mark. Working in Pembrokeshire recently, I *was* surprised at how many more invertebrate deaths were recorded on my windscreen (to the gratification of the swarms of bats gorging themselves along the lanes) than on Gower or in Carmarthenshire – though still far fewer than I remember in the 1980s.

The Welsh fauna has been enriched by natural colonisations of, for example, tree bumblebees, ivy bees, small red-eyed damselflies and many more to come. A large and increasingly varied 'natural history' human community (i.e. not all over-50s with beards) has benefited from new online and printed identification guides and other resources, from the more popular bees, macro- and micro-moths to earthworms and even pseudo-scorpions. We are seeing and learning more about invertebrates all the time. In my recent efforts to come to terms with solitary bees, I have found that the more I learn, the more I see – how did I miss them before?[2]

Invertebrate conservation work has grown enormously, through projects focused on surveys, education and, most importantly, habitat management and creation. Butterfly Conservation Wales has been joined by Bumblebee Conservation Trust and Buglife in establishing Welsh offices. Numerous invertebrate projects are run by the Welsh Wildlife Trusts, the British Dragonfly Society, and many other NGOs, as well as local authority projects such as the Colliery Spoil Biodiversity Initiative in Rhondda Cynon Taff and the Carmarthenshire Mynydd Mawr Marsh Fritillary Project.

Marsh fritillary rise and decline

I have witnessed both gains and losses while working to conserve the marsh fritillary butterfly *Euphydryas aurinia*. I watched them disappear from much of south-east Wales, and felt the echoing emptiness of formerly occupied sites in Carmarthenshire. But recent assiduous survey work by Butterfly Conservation has revealed a much larger metapopulation than previously suspected, extending from west of Cross Hands right up the Aman Valley and into Neath Port Talbot. As recently as the early 2000s, a unique and thriving marsh fritillary population was 'discovered' at MOD Castlemartin Range in Pembrokeshire, where a large expanse of unimproved, wildlife-rich coastal grassland survives agricultural improvement. Treading gingerly over turf literally carpeted with marsh fritillary larvae (along with military debris), you try not to be distracted by the rich invertebrate fauna (my first ever shrill carder bee, wow), along with rare plants, fungi and more choughs than you can shake a sward-height measuring stick at.

This makes an extreme contrast to some of the farms I've visited for pollinator surveys over the past four years, where there is barely a single clover or thistle in flower and the only insects are found at occasional flowers in the remaining hedgerows. But who would have predicted ten years ago that pollinators would regularly feature in the headlines, bringing this devastating loss of wildlife into the public eye?

Unfortunately, the focus is often entirely on domesticated honeybees. We face a huge challenge to represent complex and often incompletely understood causes of wildlife declines in a clear way. Important campaigns to ban neonicotinoid seed dressings often simplistically ignore threats from other dangerous chemicals and farming practices. Well-intentioned increases in the popularity of beekeeping, and honeybee-focused 'wildflower pollinator strips' in towns and agri-environmental schemes, may not necessarily help and may even harm native pollinators. In the current terrifying anti-expert, anti-science climate of 'alternative facts', we must be clever and creative in getting the important, undiluted messages across.

Behind these pluses and minuses lies our unknown future, living with climate change, invasive species/diseases and reduced conservation funding, amid inevitable changes to farming and environmental policies. The only certainty is that Wales's rich and varied invertebrate fauna will adapt and change. It will undoubtedly suffer further losses of populations and species, but the more resilient ones will benefit from new opportunities. We can only continue to value, discover, enthuse and work everywhere we can to save and enhance habitats for our valuable invertebrate world.

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Marsh fritillary *Euphydryas aurinia* Britheg y gors

Deborah Sazer *is a freelance ecologist based on Gower, who works on Welsh invertebrates, plants, mammals and more, with a particular interest in the marsh fritillary and other pollinators.*

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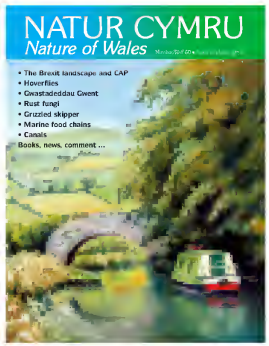

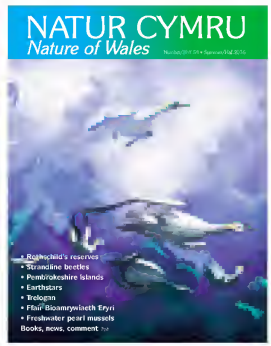

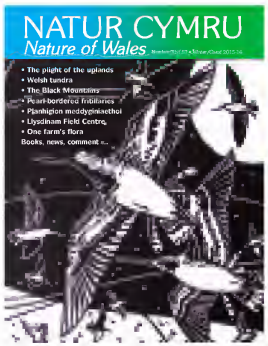

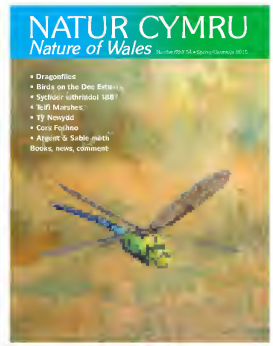

Natur Cymru: the last wor

Natur Cymru *was conceived in the late 1990s as a journal of record about the Welsh environment and its wildlife. At that time it was felt that there was a gap for this type of publication to record significant work taking place in the broad field of environmental sustainability. After this last edition, the gap will reappear.* ***DAVID PARKER*** *reflects on this and what needs to come next.*

Natur Cymru has been published continuously from 2001 until this, the last edition. This article reflects on what the publication has achieved and, importantly, considers both what is being lost and what needs to follow.

Origins

Natur Cymru grew out of discussions within the Countryside Council for Wales (CCW) and with partner organisations in the late 1990s. The partners recognised the need for a publication which would be a journal of record about Welsh natural history and environmental management, occupying the middle ground between a popular magazine and a scientific journal. It would be a successor to the much respected *Nature in Wales* journal[1] which was published from 1955 to 1987. Key individuals during this time were Malcolm Smith, Adrian Fowles, James Robertson and the late Morgan Parry, who formed a Steering Group in 2000. This group then linked to the Wales Biodiversity Group, six members of which formed a partnership to support the production of a publication: CCW, Forestry Commission, National Assembly for Wales, National Museums and Galleries of Wales, Wildlife Trusts Wales and WWF Cymru. They were joined later

d... and what comes next?

by other bodies such as Environment Agency Wales and RSPB.

Although predominantly an English language publication, from the outset articles were published in the language in which they were written. It was important to the publication's identity and purpose that it reflected the bilingual society to which it belonged and embraced this linguistic diversity, without competing with the excellent Welsh language magazine *Y Naturiaethwr* (see page 39).

Partnership and operation

The partnership worked well and, in 2005, *Natur Cymru* was constituted as a Company Limited by Guarantee with Directors drawn from the partnership organisations. *Natur Cymru* Ltd. has operated since this time with, at least in the first five years, a close relationship with the Wales Biodiversity Partnership of Welsh Government. In 2013, with the creation of Natural Resources Wales (NRW), the partnership lost members but NRW continued to support the production of *Natur Cymru* through the provision of staff time and an office. This support ceased in June 2016. Unfortunately, it has not proved possible to procure an alternative source of long-term funding and this has led to the publication of *Natur Cymru* coming to an end.

From the outset, *Natur Cymru* generated a significant proportion of its revenue from its subscribers, many of whom have taken the publication from its early editions. Subscribers are mostly in Wales, but there are a substantial number in England, particularly in the border counties. We thank our 1100 current subscribers for their support and also our recent Crowdfunder supporters whose financial contributions have enabled the publication to continue with three further editions from Autumn 2016 to Spring 2017.

David Kerr

Morgan Parry at the launch of *Natur Cymru*. Morgan presented a powerful environmental argument against building the Severn barrage (NC 20).

Content

Natur Cymru began at a time of great environmental pressure in Wales. In 2001, the Foot and Mouth crisis was at its height and the oil pollution caused by the *Sea Empress* on the Pembrokeshire coast in 1996 was still fresh in people's minds. The publication has always contained a mix of articles on such topical issues as well as contributions on the special wildlife of Wales, both on land and at sea, and how it can be cared for and managed. There have been articles covering the full range of Welsh habitats, with the largest number covering upland, coastland, island, woodland and marine habitats, as well as habitat creation, recording progress with this often challenging enterprise. Articles on wildlife have also featured strongly with the largest number on birds, insects, mammals and wild plants, but over time some coverage of all the major species groups.

Early in the development of *Natur Cymru* Morgan Parry, who was an enthusiastic supporter of the publication, promoted the concept of having articles covering environmental policy and the need for a proactive stance on conservation management and the sustainable use of natural resources. Articles on farming and wildlife, countryside policy, climate change/renewable energy, people and wildlife, and environmental education have all featured in delivering this objective.

Over time climate change has become a significant subject in the publication, reflecting the increasing understanding of its significance to the future of the natural environment. New technologies were explored: advances in DNA analysis, increasingly sophisticated tracking with satellite geolocators, and survey techniques like LIDAR and multibeam sonar at sea. There has been increasing emphasis too on community involvement and citizen science, landscape-scale conservation and renewable energy.

One consistent theme of *Natur Cymru* has been articles which look back in time to the history of places and ideas and bring them forward to the present as a guide to the future. This has been particularly the case with the Welsh islands with their long recorded histories of wildlife recording and research. *Natur Cymru* has also published biographies of great Welsh naturalists and their contributions to Welsh conservation. We have also had a section of the publication devoted to "regular features" which have provided conservation news across the sector as well as features from our partner organisations. Good examples of this are National Museum Wales and National Botanic Garden, who have provided articles about their work on biodiversity, nature conservation and earth science.

In summer 2005, the cover of the publication changed from a photograph to original artwork and this has been a distinguishing feature of *Natur Cymru* since that time[2]. For issue one there were few digital photos – the ones there were had usually been created by scanning slides or photos – but now that everyone has easy access to digital cameras the quality and abundance of images has increased and has greatly improved the visual impact of the publication.

Authors

Natur Cymru would not have been a success without its authors, who have been drawn from all walks of life and have contributed without payment. The scope of the subject matter – covering wildlife, geology, landscape, community involvement and much else – explains the variety of authors, but also a small number of committed nature conservationists have been repeat contributors. Among their number Iolo Williams wrote in Issue 2, and has been a great supporter ever since.

James Robertson was the editor of *Natur Cymru* from its inception in 2001 until 2014 when an editorial panel was established, coordinated by Geoff Gibbs. Mandy Marsh has worked as Production Manager and Assistant Editor from the outset through to the present time. This long-standing partnership between James and Mandy has been critical to the success of *Natur Cymru* and I thank them for it.

Impact

Although *Natur Cymru* has been supported by a partnership of organisations it has always maintained its editorial independence. Credit is due to these organisations, since articles have sometimes been critical of their actions and policies. This independence has given the publication a strong, sound reputation as a source of high quality evidence and a forum for debate.

John Archer-Thompson

Long-term monitoring of limpets on the South Wales Coast (NC 42:14) took on special significance after the *Sea Empress* oil spill

Natasha de Vere

DNA analysis has played an increasingly prominent role over the last 16 years (NC 46:32)

It is difficult to say whether *Natur Cymru* has had an impact leading to policy changes. However, articles on the management of habitats and species have recorded actions and results, many of which would not have been published without such a journal of record. Some articles would not have been written up at all and others only in internal reports which would not have reached beyond the office where they were written.

Between 2001 and 2015, a total of 209 articles were published on habitats, 221 articles on species, and 232 articles on conservation management and environmental policy and practice. Articles are now widely cited in other publications and it is clear that a sharing of knowledge and experience has taken place and continues to do so. A digital archive of all *Natur Cymru*'s 62 editions will be created.

Many articles have been reproduced in the *Western Mail* and the *Daily Post*. These publications have widened the publication's reach to new audiences and, on occasions, have had a political impact. Huw Jenkins, *Natur Cymru*'s former Marketing Manager, also extended its reach through the production of a blog, films, and programmes on Welsh radio.

What comes next?

With the implementation of new Welsh environmental legislation, the Nature Recovery Plan, the implication of the Brexit vote for farming and environmental management, and the continuing pressures resulting from climate change, there has never been a time when a Welsh publication like *Natur Cymru* is more

Iolo Williams, David Parker and Anna Meikle (WWF Cymru) at the *Natur Cymru* writing competition prizegiving 2010.

needed. There will of course continue to be publications produced by Government, agencies and NGOs, and the internet provides publication space with the development of conservation evidence websites[3], but these are not specific to Wales and not tuned in to the majority of *Natur Cymru*'s audience.

What then would a successor publication look like? Perhaps the current paper format should change to reflect the increasing importance of digital media, though our subscriber surveys suggest strong support for the retention of a printed publication. So it is likely that a successor publication would have both a paper and digital presence. It would also need to be published on a secure financial base which bridges the gap between subscriber income and publication costs.

Nature conservation and natural resource management cannot move forward without the sharing of information, best practice and the development of ideas. *Natur Cymru* has played its part in delivering this over the last 16 years and its loss will be deeply felt by the community it served. To take its legacy forward we need new people and the new thinking this will bring. Are you willing to take up this challenge?

***Dr David Parker** was Chair of the Natur Cymru Board from 2001-2013 and remained a Board Member thereafter. He was Director Operations and then Chief Scientist of the Countryside Council for Wales from 1998-2013, when he left to pursue other interests.*

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NATUR CYMRU

Natur Cymru - y dyfodol
Dyma rifyn olaf *Natur Cymru - Nature of Wales* yn ei argraffiad presennol.

Bydd y cwmni'n parhau anweithredol fel bod modd atgyfodi'r cylchgrawn yn hawdd pe bai cyfle'n codi. I'r perwyl hwn byddwn yn parhau â'n hymdrechion i sicrhau ariannu tymor hir i'n galluogi i ail-gychwyn *Natur Cymru*, er nad oes modd i ni wybod ym mha ffurf y byddai'n cael ei gyhoeddi.

Byddwn yn cadw manylion tanysgrifwyr fel bod modd i ni gysylltu â chi pe baem yn llwyddo i gael arian. Mae'r holl wybodaeth yn gyfrinachol ac ni fyddwn yn rhannu manylion tanysgrifwyr gydag unrhyw gorff arall. **Yr unig eithriad fyddai pe bai cwmni newydd yn bwrw ymlaen â rôl a gweithgarwch *Natur Cymru*. Os nad ydych yn dymuno i hyn ddigwydd ac os hoffech i ni ddileu eich enw o'r gronfa ddata, cofiwch adael i ni wybod.**

Rydym hefyd yn gallu gweithredu gwasanaeth gweinyddu ar raddfa lai er mwyn gwerthu ôl-rifynnau a nifer cyfyngedig o rwymwyr. Gallwch brynu'r rhain drwy gyfrwng ein gwefan, neu anfonwch eich archeb a siec, yn daladwy i **Natur Cymru Cyf**, i'n swyddfa.

Copïau digidol
Rydym yn bwriadu digideiddio'n llawn pob un o'r 62 rhifyn o *Natur Cymru* a sicrhau eu bod ar gael drwy gyfrwng ein gwefan a Llyfrgell Genedlaethol Cymru.

Mae croeso i chi ddarllen ein newyddion diweddaraf ar y cyfryngau cymdeithasol.

Natur Cymru - the future
This is the last issue of *Natur Cymru – Nature of Wales* in its current run.

The company will remain in a dormant state such that a magazine might easily be resurrected if the opportunity arises. To this end we will continue our efforts to secure long-term funding to allow *Natur Cymru* to begin again, although we cannot say what form this might take.

We will keep subscriber details on file so that if we are successful we will be able to contact you. All information is confidential and we do not release subscriber details to any other organisation. **The only exception would be to a new company taking on the role and function of *Natur Cymru*. If you do not want this to happen and would like your name removed from our database, please let us know.**

We are also able to operate a minimal administration service for the sale of back issues and a limited number of binders. You can do this via our website, or by posting your order and a cheque, payable to **Natur Cymru Ltd**, to our office.

Digital copies
It is our intention to fully digitise all 62 issues of *Natur Cymru* and make these available via our website and also the National Library of Wales.

You are also welcome to keep up with our news via social media.

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